

## OMEGA CHEMICAL SITE PRP ORGANIZED GROUP

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February 10, 2020

Julie Sullivan  
Remedial Project Manager  
United States Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, California 94105

Subject: Quarterly Performance Evaluation Report,  
Interim Groundwater Containment Remedy,  
Omega Chemical Superfund Site, Whittier, California

Dear Ms. Sullivan:

Enclosed for your review is the Quarterly Performance Evaluation Report for the Operable Unit 1 (OU-1) Interim Groundwater Containment Remedy (GCR), Omega Chemical Superfund Site, Whittier, California. The purpose for this report is to provide the USEPA with data associated with the operations of the OU-1 Groundwater Containment Remedy during the fourth quarter 2019.

This report complies with the requirements in the April 2007 Performance Standards Verification Plan, Operations, Maintenance, and Monitoring Manual for the operation of the GCR. Overall, this report is being provided to satisfy the data reporting requirements defined under Section IX of the February 2001 Consent Decree No. 00-12471 between the USEPA and OPOG by presenting data collected during the period and providing evidence that the GCR is compliant with the OU-1 Groundwater Removal Action Objectives.

Should you have any questions, regarding the above, please contact me.

Sincerely,

Omega Chemical Site PRP Organized Group

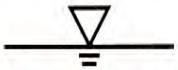


Edward Modiano  
Project Coordinator



Jaime Dinello, PE  
Project Manager

cc: Don Indermill, DTSC



*de maximis, inc.*

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FEBRUARY 10, 2020

INTERIM GROUNDWATER CONTAINMENT REMEDY  
QUARTERLY PERFORMANCE EVALUATION REPORT  
FOURTH QUARTER 2019  
OMEGA CHEMICAL SUPERFUND SITE, OU-1

*Prepared for:*

Omega Chemical Site  
PRP Organized Group  
(OPOG)

*Prepared by:*

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# INTERIM GROUNDWATER CONTAINMENT REMEDY OPERABLE UNIT 1 OMEGA CHEMICAL SUPERFUND SITE

## Quarterly Performance Evaluation Report Fourth Quarter 2019

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## INTERIM GROUNDWATER CONTAINMENT REMEDY OPERABLE UNIT 1 OMEGA CHEMICAL SUPERFUND SITE

### Quarterly Performance Evaluation Report Fourth Quarter 2019

#### **1. INTRODUCTION**

This Quarterly Performance Evaluation Report (QPER) has been prepared for the Interim Groundwater Containment Remedy (GCR) on behalf of the Omega Chemical Site Potentially Responsible Parties Organized Group (OPOG) to comply with the February 2001 Consent Decree (CD) No. 00-12471 between the USEPA and OPOG (USEPA, 2001). As stated in the September 2005 Removal Action Memorandum (USEPA, 2005), the primary goal of the selected remedy is to contain the highest levels of contamination dissolved in groundwater within Operable Unit 1 (OU-1), so that the contamination does not migrate and contribute to the downgradient regional groundwater plume. To achieve this goal, the OU-1 Groundwater Containment Remedy (GCR) was installed and began operating in 2009. The location and components of the GCR are presented on Figure 1.

The GCR Remedial Action Objective (RAO) monitoring requirements are specified in the Performance Standards Verification Plan (PSVP) (CDM, 2007). Updated monitoring requirements will be included in the Final OU-1 Groundwater Containment System Operations Monitoring & Maintenance (OM&M) Manual. The Draft OM&M Manual was submitted to the USEPA on July 3, 2019 and is currently under review by the USEPA. Current monitoring requirements are as follows:

- GCR operational data are collected to support the determination of compliance with the second RAO (RAO #2, treated vapor emissions and treated groundwater discharge) as well as to conform to the requirements of the PSVP and the current OM&M Manual (CDM, 2010). These data are included in Section 2.
- Quarterly piezometric data from the PSVP-specified monitoring locations are plotted to illustrate that groundwater flow is toward the pumping wells (CDM, 2005). The goal of

this monitoring is to verify that vertical and hydraulic containment of groundwater contamination within OU-1 is achieved. According to the CD, these data provide the primary documentation of containment required by RAO #1 (USEPA, 2001). These data are included in Section 3.

- Annually, a particle tracking figure is prepared that simulates the hydraulic capture zone within the OU-1 boundary (CDM, 2007). The simulated capture zone is used to support the piezometric capture analysis. This analysis is conducted as part of the Annual Performance Evaluation Report (which replaces the Third Quarter QPER). No particle tracking evaluations were performed this quarter.
- Annually, concentration trends at downgradient wells OW-9 and OW-10 are evaluated using the Mann-Kendall analysis on cumulative historical tetrachloroethene (PCE), trichloroethene (TCE), and 1,4-dioxane concentrations, and over the most current three-year period (OPOG, 2016). This analysis is conducted as part of the Annual Performance Evaluation Report (which replaces the Third Quarter QPER). The Mann-Kendall analysis was not performed this quarter.
- Semi-annual water quality monitoring data are plotted on time-series charts to show concentration trends (CDM, 2007). These data are collected during the first and third quarter monitoring events and are used to further demonstrate horizontal and vertical containment. Water quality samples are not collected during the fourth quarter.

## **2. GCR SYSTEM OPERATIONS THIS QUARTER**

The GCR System functioned this quarter with minimal issues or downtime. Below is a list of non-routine operations and maintenance items which occurred during the fourth quarter:

- Air stripper cleaning was completed on October 18, 2019.
- Leak detection activities conducted in the third quarter indicated that minor leaks may be occurring in the Fernco transition fittings where the conveyance piping enters the extraction well vaults. Silicone sealant was applied to the affected areas on October 31, 2019. Leak detection ports will be monitored periodically for leaks.
- Alarm testing was conducted periodically during the fourth quarter. As a result of this testing, the Discharge Pipeline High Pressure Switch was replaced on December 12,

2019.

- The exterior sump was cleaned out on November 19, 2019.
- The County Sanitation Districts of Los Angeles County (SDLAC) Effluent Flow Meter calibration was conducted on December 12, 2019.
- VE-7D and VE-10D were shut down between December 12 and 31, 2019 as electricity to the AOC SVE System was locked out as part of the existing blower removal (in preparation of replacement).

The GCR had an operational run time of approximately 99 percent during the fourth quarter (Table 1). Approximately 2.9 pounds of Volatile Organic Carbon (VOC) mass were removed from treated groundwater (via the air stripper) during the fourth quarter, compared to 1.9 pounds removed during the previous quarter. Figure 2 shows the cumulative mass removed since 2009. The total gallons of water treated during the Third Quarter 2019 and Fourth Quarter 2019 was 600,300 and 677,600 gallons, respectively.

### EXTRACTION WELLS

The Extraction Wells (EWs) (EW-1 through EW-5) were mechanically functional this quarter. Attachment A, Table A-1 includes measurements for each EW during this quarter, including pump runtime, extracted volume, operational flow rate, average flow rate, and calculated mass removed (if semi-annual water quality monitoring was conducted). The measured depth to water (during the quarterly piezometric monitoring) and targeted extraction interval (i.e. screen interval) are discussed in Section 3.

In addition to the five GCR EWs, seven dual-phase extraction (DPE) wells are extracting groundwater within OU-1. These DPE wells were constructed in 2014 as part of the Full Scale On-Site (OU-1) Soil Remedy under the 2010 Consent Decree between the USEPA and OPOG (USEPA 2010). These wells are designated DPE-3, DPE-4, DPE-5, DPE-8, DPE-9, VE-7D, and VE-10D, and are shown on Figure 1. Although installed as part of the OU-1 soil remedy to increase subsurface vapor removal, the DPE wells are currently extracting most of the water and contaminant mass. Pumping from the DPE wells accounted for approximately 98% of groundwater extracted this quarter.

Other groundwater data collected during the quarter, including data from groundwater pumped from the DPE wells, are summarized in Attachment B. This includes operational information

such as volume of groundwater extracted this quarter, targeted extraction interval (i.e. screen interval), approximate depth to water, analytical data (if collected), and calculations of mass removed per pumping well, if applicable. Laboratory analytical results and associated data validation reports are included in Attachment C.

#### AIR STRIPPER

VOC concentrations in groundwater prior to and after treatment by the air stripper are summarized in Table 2. These data show continued effectiveness in transferring VOCs from the aqueous phase to the vapor phase for treatment by the Vapor Phase Granular Activated Carbon (VGAC). Air stripper influent concentrations over time are shown on Figure 3. Laboratory analytical results and associated data quality assessments are included in Attachment C.

#### TREATED VAPOR DISCHARGE

The GCR operated in accordance with treated vapor discharge limits and VGAC operations requirements. The carbon changeout criteria were not triggered during this quarter (Attachment A, Table A-2). The VGAC change out criteria are currently based on the existing Health Risk Assessment (CDM Smith, 2015). A revised Health Risk Assessment was prepared and submitted to the USEPA on March 18, 2019 and is currently under review by the USEPA. The most recent carbon changeout for the GCR was conducted on March 23, 2015.

Table 3 shows the chemical-specific concentrations in the VGAC influent, midpoint, and effluent and effluent discharge limits for the fourth quarter. Attachment A, Table A-2 show VGAC operational conditions for flow rate, temperature, and total VOC emissions as indicated by a Photo Ionization Detector (PID).

#### TREATED EFFLUENT DISCHARGE

Discharge compliance samples are collected on a quarterly basis from the designated sample collection point (20039A) to confirm compliance with the current SDLAC Industrial Waste Discharge Permit (No. 20039). The SDLAC permit is dated August 8, 2017 and is scheduled to expire on August 7, 2022. The results for the quarterly effluent samples were provided to SDLAC in the self-monitoring report (Attachment D). The analytical results show that all analytes were within SDLAC permit limits or were non-detectable above reporting limits.

### **3. QUARTERLY PIEZOMETRIC MONITORING**

A network of five EWs, 11 groundwater observation wells, and four piezometers are included in the quarterly piezometric monitoring. The quarterly piezometric data are provided in Attachment E, Table E-1. Included in this table are the screen interval (which would equate to the target extraction interval in the listed EWs), and approximate depth to water. Historical piezometric data are presented in time series charts in Attachment E, Figures E-1 through E-20. Note that observation wells OW-4a and OW-4b, included in the PSVP, were transferred out of the OU-1 program in 2017 and are now monitored by OPOG and other Settling Work Defendants as part of OU-2 in accordance with the OU-2 Consent Decree (USEPA 2017).

Attachment F provides a review of the piezometric conditions during the fourth quarter piezometric monitoring. As demonstrated by Figure F-1, horizontal containment of OU-1 groundwater continues to be achieved. It is also noted that the regional drought conditions and the pumping from Full Scale On-Site (OU-1) Soil Remedy DPE wells have reduced water levels locally to below the pump intake of some GCR extraction wells. The combination of all these factors has essentially dewatered the aquifer within the OU-1 boundary, and thus is providing horizontal containment.

Vertical gradients are examined at a well triplet and two well pairs (Figure F-2). There is minimal hydraulic connection between the shallow extraction zone (A-Zone) and the deeper B-Zone due to the presence of a confining layer which prevents significant downward vertical transport (Figure F-4). The significant head differential between the A-Zone and B-Zone is further evidence of very limited hydraulic connection between the zones.

#### **GROUNDWATER MODEL UPDATE AND FLOW TRACKING FIGURE**

The annual groundwater model was not updated this quarter. Attachment G serves as a placeholder for the next annual groundwater model update, expected to be included in the Annual Performance Evaluation Report (which takes the place of the third quarter QPER).

Field forms for the quarterly piezometric monitoring and semi-annual water quality monitoring (if conducted) are included in Appendix H.

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## MANN-KENDALL ANALYSIS

The annual Mann-Kendall analysis was not completed this quarter. Attachment I serves as a placeholder for the next annual Mann-Kendall analysis, expected to be included in the Annual Performance Evaluation Report (which takes the place of the third quarter QPER).

## **4. SEMI-ANNUAL WATER QUALITY MONITORING**

A network of 5 EWs and 11 groundwater monitoring wells are included semi-annual water quality monitoring, conducted in the first and third quarters. Semi-annual water quality monitoring was not conducted during this quarter.

## **5. SUBMITTALS DURING THE QUARTER**

The following submittals were provided to USEPA this quarter as part of the OU-1 GCR:

- Interim Groundwater Containment Remedy Quarterly Performance Evaluation Report, Third Quarter 2019 (November 15, 2019)

## **6. PLANNED ACTIVITIES**

Planned operational and monitoring activities scheduled for the fourth quarter include the following:

- Quarterly piezometric and semi-annual groundwater monitoring
- Termination of groundwater extraction at DPE well VE-7D as the value of groundwater extraction is limited (low pumping rate and low concentrations of PCE in groundwater). Groundwater extraction will be terminated following the completion of the semi-annual groundwater monitoring and review of data conducted during the First Quarter 2020. Vapor extraction will continue in this well
- Monthly assessment of VGAC effectiveness and need for carbon changeout
- Monthly and quarterly assessment of data to determine if system adjustments are appropriate
- Quarterly performance reporting

## 7. REFERENCES

- CDM. (2005). *Removal Action Plan and Preliminary Design Report*, December 16.
- CDM. (2007). *Performance Standards Verification Plan for Phase 1a Area Groundwater Treatment System*, April 19.
- CDM. (2010). *Final Operations, Maintenance, and Monitoring Manual*, February 19
- CDM Smith. (2015). *Memorandum: Treatment of Effluent from Groundwater Treatment System and Soil Vapor Extraction, Omega Chemical Superfund Site, Whittier, California 90602*, February 26.
- OPOG. (2016). OPOG Responses to EPA Comments dated March 10 and 21, 2016. Draft 2015 Annual PSVP Report, Omega Chemical Superfund Site, Whittier, California, August.
- USEPA. (2001). *Consent Decree No. 00-12471*, February 28
- USEPA. (2005). *Removal Action Memorandum*, September 27
- USEPA. (2010). *Consent Decree Docket No. 10-05051*, October 6
- USEPA. (2017). *Consent Decree No. 2:16-cv-02696-GW-E*, March 31

# **TABLES**

**Table 1**  
**GWTP Operational Summary and Mass Removed Totals**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**Fourth Quarter 2019**

Month	GWTP Runtime Percent <sup>1</sup> (%)	GWTP Runtime Hours (hrs)	Operational Flow Rate <sup>2</sup> (gpm)	Average Flow Rate <sup>3</sup> (gpm)	Total Gallons Processed <sup>4</sup> (gal)	Mass Removed <sup>5</sup> (lbs)
October 2019	99	736	5.6	5.6	248,100	0.9
November 2019	97	699	5.4	5.2	226,400	0.9
December 2019	100	740	4.6	4.5	203,100	1.1
<b>4th Quarter 2019</b>	<b>Average = 99</b>	<b>Average = 725</b>	<b>Average = 5.2</b>	<b>Average = 5.1</b>	<b>Total = 677,600</b>	<b>Total = 2.9</b>
				<b>Cumulative Total<sup>6</sup></b>	<b>45,094,365</b>	<b>980.5</b>

**Notes:**

1. GWTP Runtime Percent is the percentage of total hours in the month that the GWTP actually operated.
2. Operational flow rate calculated from total gallons processed in the month and hours the GWTP actually operated in the month.
3. Average flow rate is calculated from total gallons processed in the month and total hours in the month, regardless of GWTP uptime.
4. Total gallons processed includes groundwater pumped to the GWTP from the Full Scale On-Site (OU-1) Soil Remedy DPE wells.
5. Mass removed is calculated from the average VOC concentration in the air stripper influent and discharge, and the total gallons processed. See Table 3.
6. The GWTP has to date treated 45,094,365 gallons of water and removed a cumulative total of 980.5 pounds of contaminant. See Figure 2.

gpm = gallons per minute

hrs = hours

gal = gallons

lbs = pounds

**Table 2**  
**Air Stripper Influent and Effluent Concentrations Demonstrating Proper System Function**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**Fourth Quarter 2019**

Sample ID	Sample Date	PCE	TCE	MeCL	1,2-DCA	Freon 11	Freon 113
OC_SP210_INF_100419	10/4/2019	260	28	20 U	4 U	19	100
OC_SP220B_EFF_100419	10/4/2019	1 U	1 U	5 U	1 U	1 U	5 U
OC_SP210_INF_110519	11/5/2019	250	30	5 U	2.6	21	100
OC_SP220B_EFF_110519	11/5/2019	1 U	1 U	5 U	1 U	1 U	5 U
OC_SP210_INF_120619	12/6/2019	320	41	5.1 J	3.6 J	26	160
OC_SP220B_EFF_120619	12/6/2019	1 U	1 U	5 U	1 U	1 U	5 U

Notes:

INF = Air stripper influent water. Untreated water sample collected downstream of bag filters.

EFF = Air stripper effluent water. Treated water sample collected in discharge header upstream of SDLAC sample box.

All results are in micrograms per liter (ug/L)

U = not detected above reporting limit listed

J = quantitatively estimated

PCE = Tetrachloroethene; TCE = Trichloroethene; MeCL = Methylene chloride; 1,2-DCA = Dichloroethane

**Table 3**  
**Vapor Phase GAC Concentrations Demonstrating Substantive Compliance with SCAQMD Regulations**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**Fourth Quarter 2019**

SCAQMD Chemical-Specific Effluent Limit <sup>1</sup>			28	12	18	12	12	6900	230	95
Sample ID	Sample Date	Units	PCE	TCE	1,1-DCA	1,2-DCA	BZ	MeCl	VC	CFM
OC_VGAC_INF_SP241_100419	10/4/2019	ppbv	55	9	1.2 U	1.2 U	1.2 U	12 U	1.2 U	4.3
OC_VGAC_INT_SP245_100419	10/4/2019	ppbv	1.2 U	12 U	1.2 U	5.6				
<b>OC_VGAC_EFF_SP242_100419<sup>2</sup></b>	10/4/2019	ppbv	<b>1.3 U</b>	<b>13 U</b>	<b>1.3 U</b>	<b>4.6</b>				
OC_VGAC_INF_SP241_110519	11/5/2019	ppbv	50	8.9	1.2 U	1.2 U	1.2 U	12 U	1.2 U	4.6
OC_VGAC_INT_SP245_110519	11/5/2019	ppbv	1.2 U	12 U	1.2 U	4.9				
<b>OC_VGAC_EFF_SP242_110519</b>	11/5/2019	ppbv	<b>1.2 U</b>	<b>12 U</b>	<b>1.2 U</b>	<b>4.2</b>				
OC_VGAC_INF_SP241_120619	12/6/2019	ppbv	57	7.5	1.3 U	1.3 U	1.3 U	13 U	1.3 U	4.2
OC_VGAC_INT_SP245_120619	12/6/2019	ppbv	1.2 U	12 U	1.2 U	4.1				
<b>OC_VGAC_EFF_SP242_120619</b>	12/6/2019	ppbv	<b>1.2 U</b>	<b>12 U</b>	<b>1.2 U</b>	<b>3.7</b>				
<b>Compliance with Effluent Limits?</b>			<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>

1. SCAQMD effluent limits are derived from the Health Risk Assessment (CDM Smith, 2015).

2. Bold text indicates vapor effluent results from the VGAC effluent required to meet SCAQMD HRA chemical specific limits shown in the table.

INF = Vapor phase GAC influent. VOC-laden vapor sample collected at the influent to the lead vapor GAC unit.

INT = Vapor phase GAC intermediate. Partially treated vapor sample collected between the lead and lag vapor GAC units.

EFF = Vapor phase GAC effluent. Fully treated vapor sample collected at the effluent from lag (polishing) vapor GAC unit.

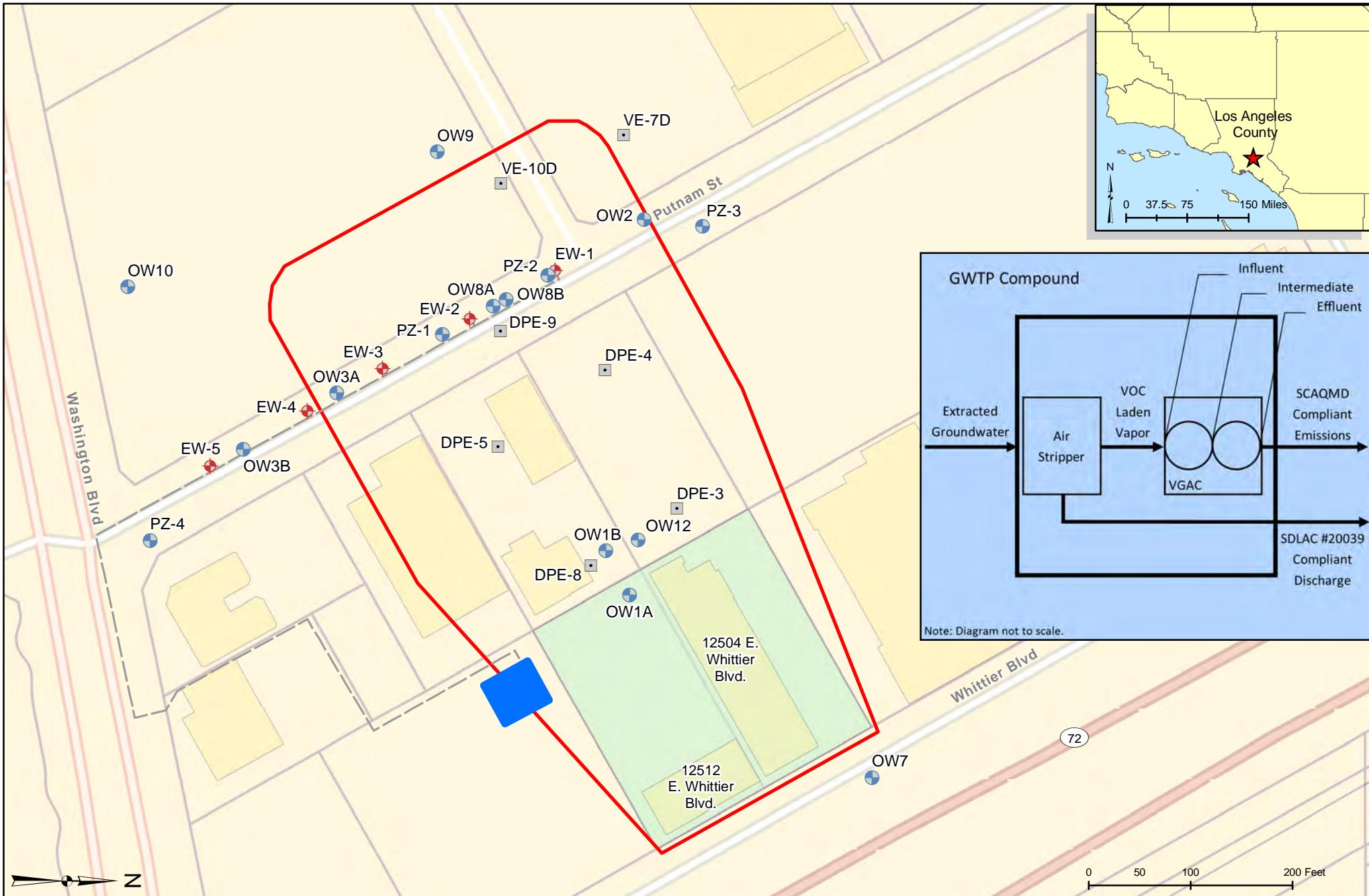
VGAC = vapor phase granular activated carbon; GAC = granular activated carbon

SCAQMD HRA Limit = South Coast Air Quality Management District Health Risk Assessment permitted concentration limit in ppbv

U = not detected above reporting limit listed

PCE = Tetrachloroethene; TCE = Trichloroethene; 1,1-DCA = 1,1-Dichloroethane; 1,2-DCA = 1,2-Dichloroethane; BZ = Benzene; MeCl = Methylene chloride; VC = Vinyl chloride; CFM = Chloroform

# **FIGURES**



- ◆ GCR Extraction Well
- Observation Well / Piezometer
- OU-1 On-Site Soil Remedy
- Dual Phase Extraction Well
- ~~~~ GCR Conveyance Piping

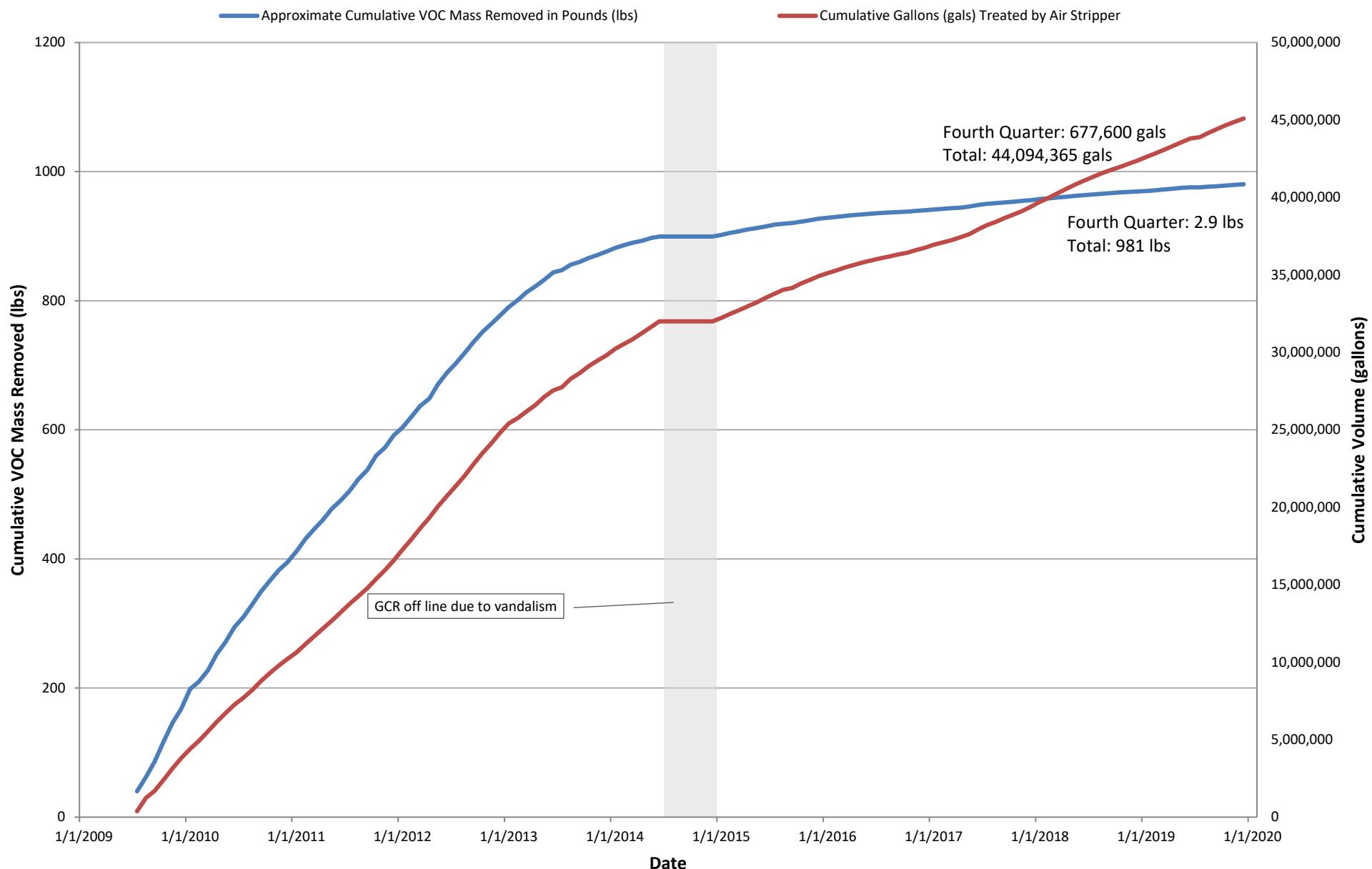
- GWTP Compound Location
  - Former Omega Chemical Property Boundary
  - OU-1 Boundary
- Only piezometric data are collected from PZ-3 for GCR performance monitoring.

**ddms**  
de maximis, inc.

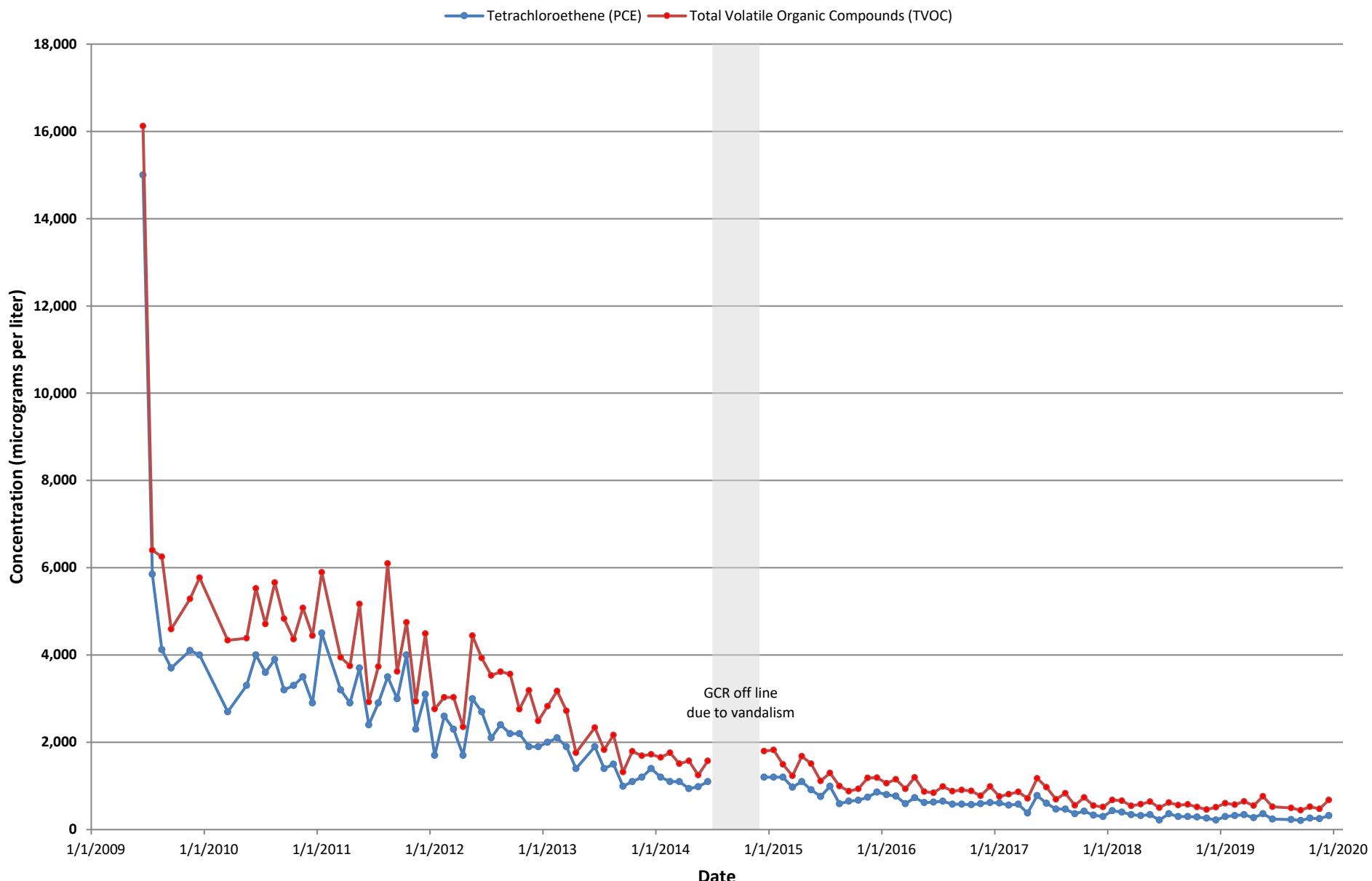
Reviewed By: KRK  
Drawn By: LEM  
Date: 11/12/2019

**Figure 1**  
**OU-1 Location Map**  
**OU-1 Groundwater Containment Remedy,**  
**Omega Chemical Superfund Site**  
**12504/12512 East Whittier Boulevard**  
**Whittier, California**

**Figure 2**  
**Cumulative Gallons Treated and Mass Removed**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**Fourth Quarter 2019**



**Figure 3**  
**GCR Air Stripper Influent Concentrations**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**Fourth Quarter 2019**



## **ATTACHMENT A**

### **Operational Data Summaries**

**Attachment A, Table A-1**  
**Hydraulic Containment Extraction Well Operational Summary**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**Fourth Quarter 2019**

		Pump Runtime (hrs)	Total Volume Extracted (gal)	Operational Flow Rate <sup>1</sup> (gpm)	Average Flow Rate <sup>2</sup> (gpm)
EW-1	October 2019	0	0	0	0
	November 2019	0.01	1.26	2.10	0.00003
	December 2019	0	0	0	0
	4th Quarter 2019	0.01	1.26	0.70	0.00001
EW-2	October 2019	0	0	0	0
	November 2019	0	0	0	0
	December 2019	0	0	0	0
	4th Quarter 2019	0	0	0	0
EW-3	October 2019	0	0	0	0
	November 2019	0.13	14.9	1.91	0.0003
	December 2019	1.76	185	1.75	0.004
	4th Quarter 2019	1.89	200	1.22	0.001
EW-4	October 2019	2.39	995	6.94	0.02
	November 2019	1.34	568	7.06	0.01
	December 2019	1.40	570	6.79	0.01
	4th Quarter 2019	5.13	2,133	6.93	0.02
EW-5	October 2019	183	4,153	0.38	0.09
	November 2019	125	3,759	0.50	0.09
	December 2019	25.1	3,439	2.28	0.08
	4th Quarter 2019	333	11,351	1.05	0.09

Notes:

1. Operational flow rate calculated from total gallons processed in the month and hours the pump actually operated in the month.

2. Average flow rate is calculated from total gallons processed in the month and total hours in the month, regardless of pump uptime.

All extraction wells operate on/off based on water levels measured by pressure transducers installed in each well.

hrs = hours

gal = gallons

gpm = gallons per minute

**Attachment A, Table A-2**  
**Vapor Phase GAC Operational Data Demonstrating Substantive Compliance with SCAQMD Regulations**  
**Fourth Quarter 2019**

SCAQMD Limit		1000	145			3.6		
HRA Changeout Criteria					12 <sup>3</sup>		90 <sup>3</sup>	
Date	Influent Vapor Relative Humidity (%)	Influent Vapor Flow Rate (SCFM)	Influent Vapor Temperature (°F)	Influent PID Measurement (ppmv)	Intermediate PID Measurement (ppmv)	Effluent PID Measurement (ppmv)	Lead VGAC Efficiency <sup>1</sup> (%)	Overall VGAC Efficiency <sup>2</sup> (%)
10/3/2019	19.3	704	107.1	0.515	0.430	0.293	17	43
10/8/2019	19.0	706	108.2	0.121	0.000	0.020	100	83
10/15/2019	19.4	712	109.6	1.219	0.852	0.760	30	38
10/22/2019	19.7	722	105.3	0.000	0.000	0.000	100	100
10/31/2019	18.5	707	104.4	1.468	0.000	0.000	100	100
11/5/2019	18.6	693	98.9	0.335	0.000	0.000	100	100
11/12/2019	18.9	691	99.9	0.251	0.000	0.000	100	100
11/21/2019	19.0	700	98.9	0.417	0.005	0.002	99	100
11/29/2019	18.6	691	93.5	1.185	0.270	0.416	77	65
12/6/2019	18.9	726	98.9	0.620	0.322	0.090	48	85
12/12/2019	18.4	729	103.9	1.337	0.305	0.258	77	81
12/19/2019	18.9	707	95.9	1.901	0.198	0.160	90	92
12/27/2019	19.4	693	92.2	0.388	0.000	0.000	100	100
12/31/2019	19.5	703	96.4	0.589	0.516	0.088	12	85
<b>4th Quarter 2019</b>	<b>19.0</b>	<b>706</b>	<b>100.9</b>	<b>0.739</b>	<b>0.207</b>	<b>0.149</b>	<b>72</b>	<b>80</b>
<b>Compliance with SCAQMD Limits?</b>		<b>YES</b>	<b>YES</b>			<b>YES</b>		
<b>Carbon changeout required this year?</b>					<b>NO</b>		<b>NO</b>	

Notes:

°F = degrees Fahrenheit

SCFM = Standard Cubic Feet per Minute

PID = photoionization detector

-- = not measured

VGAC = vapor phase granular activated carbon

GAC = granular activated carbon

ppmv = parts per million by volume as hexane

SCAQMD HRA = South Coast Air Quality Management District Health Risk Assessment

1. Lead VGAC efficiency is calculated by the PID readings between the influent and intermediate.

2. Overall VGAC efficiency is calculated by the PID readings between the influent and effluent.

3. These limits by the SCAQMD Health Risk Assessment are for determining when a carbon changeout is required. **BOTH** limits for intermediate PID concentration and the lead VGAC efficiency must be exceeded during the same sampling event for the changeout requirement to take effect.

## Kyle King

---

**From:** Reed, Alesandra F. <reedaf@cdmsmith.com>  
**Sent:** Monday, February 03, 2020 10:14 AM  
**To:** Kyle King; Laura Millan  
**Cc:** Jaime Dinello; Bamer, Jeffrey  
**Subject:** OU-1 GWCS GAC Evaluation October 2019  
**Attachments:** Omega GWCS GAC Assessment\_October 2019.xlsx

**\*\* WARNING EXTERNAL SENDER \*\***

Team,

We evaluated the performance of the GAC used by the GWCS for the month of October 2019, relative to the conditions listed in the Health Risk Assessment (HRA) (CDM Smith 2015). These conditions must be met to remain in substantive compliance with SCAQMD requirements.

During the month of October, the GWCS system met the conditions presented in the HRA and was therefore substantively compliant:

- None of the toxic air contaminants listed in Condition #14 of the HRA were detected in the effluent above their respective effluent limit (see table below).
- The GWCS did not meet the two criteria for replacement of the lead GAC vessel (listed under Condition #12 of the HRA), and therefore no GAC replacement was required.
- No other carcinogenic air contaminants beyond those listed in Condition #14 of the HRA were detected in effluent above 10 ppbv, and therefore per Condition #16, no toxic risk assessment was required.

We also evaluated all the analytical and PID data and, based on our professional judgement, determined that a voluntary changeout of the lead vessel GAC was not needed.

GWCS GAC Assessment - Based on Samples Collected October 4, 2019					
Parameter	Concentration (ppbv)				Below 2015 HRA Limit?
	Influent	Midpoint	Effluent	HRA Effluent Limit	
1,1,1-Trichloroethane (TCA)	ND	ND	ND	3	Yes
1,1-Dichloroethane	ND	ND	ND	18	Yes
1,1-Dichloroethene	14	17	21	140	Yes
1,2-Dichloroethane	ND	ND	ND	12	Yes
Benzene	ND	ND	ND	12	Yes
Carbon disulfide	ND	ND	ND	690	Yes
Chloroform	4.3	5.6	4.6	95	Yes
Freon 11	4.7	4.9	5.7	4200	Yes
Freon 113	19	25	24	510	Yes
Freon 12	ND	ND	ND	249	Yes
Isopropyl Alcohol (Isopropanol)	ND	ND	ND	29	Yes
o-Xylene	ND	ND	ND	3	Yes
Methyl ethyl ketone	ND	ND	ND	24	Yes

Methylene chloride	ND	ND	ND	6900	Yes
Tetrachloroethene (PCE)	55	ND	ND	28	Yes
TNMOC ref. to Heptane (MW=100)	130	59	63	4177	Yes
Toluene	ND	ND	ND	42	Yes
Trichloroethene (TCE)	9	ND	ND	12	Yes
Vinyl chloride	ND	ND	ND	230	Yes

Please let us know if you have any questions or wish to discuss these data further.

Thanks!  
Alesandra

**Alesandra Reed, PE**  
 Environmental Engineer  
 CDM Smith  
 555 17<sup>th</sup> Street, Suite 500, Denver, CO 80202  
 (cell) 352.222.2583, (office) 303.383.2475



## Kyle King

---

**From:** Reed, Alesandra F. <reedaf@cdmsmith.com>  
**Sent:** Monday, February 03, 2020 10:14 AM  
**To:** Kyle King; Laura Millan  
**Cc:** Jaime Dinello; Bamer, Jeffrey  
**Subject:** Omega GWCS - November GAC Assessment  
**Attachments:** Omega GWCS GAC Assessment\_November 2019.xlsx

### \*\* WARNING EXTERNAL SENDER \*\*

Team,

We evaluated the performance of the GAC used by the GWCS for the month of November 2019, relative to the conditions listed in the Health Risk Assessment (HRA) (CDM Smith 2015). These conditions must be met to remain in substantive compliance with SCAQMD requirements.

During the month of November, the GWCS system met the conditions presented in the HRA and was therefore substantively compliant:

- None of the toxic air contaminants listed in Condition #14 of the HRA were detected in the effluent above their respective effluent limit (see table below).
- The GWCS did not meet the two criteria for replacement of the lead GAC vessel (listed under Condition #12 of the HRA), and therefore no GAC replacement was required.
- No other carcinogenic air contaminants beyond those listed in Condition #14 of the HRA were detected in effluent above 10 ppbv, and therefore per Condition #16, no toxic risk assessment was required.

We also evaluated all the analytical and PID data and, based on our professional judgement, determined that a voluntary changeout of the lead vessel GAC was not needed.

GWCS GAC Assessment - Based on Samples Collected November 5, 2019					
Parameter	Concentration (ppbv)				Below 2015 HRA Limit?
	Influent	Midpoint	Effluent	HRA Effluent Limit	
1,1,1-Trichloroethane (TCA)	ND	ND	ND	3	Yes
1,1-Dichloroethane	ND	ND	ND	18	Yes
1,1-Dichloroethene	11	12	14	140	Yes
1,2-Dichloroethane	ND	ND	ND	12	Yes
Benzene	ND	ND	ND	12	Yes
Carbon disulfide	ND	ND	ND	690	Yes
Chloroform	4.6	4.9	4.2	95	Yes
Freon 11	5	4.7	4.8	4200	Yes
Freon 113	18	20	18	510	Yes
Freon 12	ND	ND	ND	249	Yes
Isopropyl Alcohol (Isopropanol)	ND	ND	ND	29	Yes
o-Xylene	ND	ND	ND	3	Yes
Methyl ethyl ketone	ND	ND	ND	24	Yes

Methylene chloride	ND	ND	ND	6900	Yes
Tetrachloroethene (PCE)	50	ND	ND	28	Yes
TNMOC ref. to Heptane (MW=100)	120	27	46	4177	Yes
Toluene	2.2	ND	ND	42	Yes
Trichloroethene (TCE)	8.9	ND	ND	12	Yes
Vinyl chloride	ND	ND	ND	230	Yes

Please let us know if you have any questions or wish to discuss these data further.

Thanks!  
Alesandra

**Alesandra Reed, PE**  
 Environmental Engineer  
 CDM Smith  
 555 17<sup>th</sup> Street, Suite 500, Denver, CO 80202  
 (cell) 352.222.2583, (office) 303.383.2475



## Kyle King

---

**From:** Reed, Alesandra F. <reedaf@cdmsmith.com>  
**Sent:** Monday, February 03, 2020 10:17 AM  
**To:** Kyle King; Laura Millan  
**Cc:** Jaime Dinello; Bamer, Jeffrey  
**Subject:** OU-1 GWCS GAC evaluation December 2019  
**Attachments:** Omega GWCS GAC Assessment\_Dec 2019.xlsx

### \*\* WARNING EXTERNAL SENDER \*\*

Team,

We evaluated the performance of the GAC used by the GWCS GAC system for the month of December 2019, relative to the conditions listed in the Health Risk Assessment (HRA) (CDM Smith 2015). These conditions must be met to remain in substantive compliance with SCAQMD requirements.

During the month of December, the GWCS GAC system met the conditions presented in the HRA and is therefore substantively compliant:

- None of the toxic air contaminants listed in Condition #14 of the HRA were detected in the effluent above their respective effluent limit, as summarized in the table below.
- The SVE GAC system met the two criteria for replacement of the lead GAC vessel (listed under Condition #12 of the HRA).
- No other carcinogenic air contaminants beyond those listed in Condition #14 of the HRA were detected in effluent above 10 ppbv, and therefore per Condition #16, no toxic risk assessment was required.

We also evaluated all the analytical and PID data and, based on our professional judgement, determined that a voluntary changeout of the lead vessel GAC was not needed.

Parameter	Concentration (ppbv)				Below 2015 HRA Limit?
	Influent	Midpoint	Effluent	HRA Effluent Limit	
1,1,1-Trichloroethane (TCA)	ND	ND	ND	3	Yes
1,1-Dichloroethane	ND	ND	ND	18	Yes
1,1-Dichloroethene	13	11	15	140	Yes
1,2-Dichloroethane	ND	ND	ND	12	Yes
Benzene	ND	ND	ND	12	Yes
Carbon disulfide	ND	ND	ND	690	Yes
Chloroform	4.2	4.1	3.7	95	Yes
Freon 11	4.8	4.3	4.8	4200	Yes
Freon 113	19	20	22	510	Yes
Freon 12	ND	ND	ND	249	Yes
Isopropyl Alcohol (Isopropanol)	ND	ND	ND	29	Yes
o-Xylene	ND	ND	ND	3	Yes
Methyl ethyl ketone	ND	ND	ND	24	Yes

Methylene chloride	ND	ND	ND	6900	Yes
Tetrachloroethene (PCE)	57	ND	ND	28	Yes
TNMOC ref. to Heptane (MW=100)	150	70	68	4177	Yes
Toluene	ND	ND	ND	42	Yes
Trichloroethene (TCE)	7.5	ND	ND	12	Yes
Vinyl chloride	ND	ND	ND	230	Yes

Please let us know if you have any questions or wish to discuss these data further.

Thanks!  
Alesandra

**Alesandra Reed, PE**  
 Environmental Engineer  
 CDM Smith  
 555 17<sup>th</sup> Street, Suite 500, Denver, CO 80202  
 (cell) 352.222.2583, (office) 303.383.2475



## **ATTACHMENT B**

**Other Data Collected This Quarter**



OU-1 On-Site Soil Remedy  
 Dual Phase Extraction Well  
 Observation Well/Piezometer

 Former Omega Chemical  
 Property Boundary  
 OU-1 Boundary



Reviewed By: LEM  
 Drawn By: KM  
 Date: 10/8/2019

**Attachment B, Figure B-1**  
**Other Groundwater Data Locations**  
**Omega Chemical Superfund Site**

**Attachment B, Table B-1**  
**Other Groundwater Elevation Data Collected This Quarter**  
**Omega Chemical Superfund Site**  
**Fourth Quarter 2019**

Well No.	Top of Casing Elevation (feet MSL)	Screen Interval (feet MSL)	Date	Depth To Water (feet btoc)	Groundwater Elevation (feet MSL)
PZ-9	197.97	108.49 - 128.49	11/5/2019	85.55	112.42
OW11	200.06	100.52 - 120.52	11/5/2019	87.47	112.59
OW13B	210.89	71.37 - 81.37	11/5/2019	99.45	111.44
DPE-3 <sup>1</sup>	206.76	109.32 - 169.32	11/7/2019	90.29	116.47
DPE-4 <sup>1</sup>	202.97	105.50 - 165.50	11/7/2019	91.45	111.52
DPE-5 <sup>1</sup>	201.77	104.36 - 164.36	11/7/2019	90.26	111.51
DPE-8 <sup>1</sup>	204.87	107.46 - 167.46	11/7/2019	87.97	116.90
DPE-9 <sup>1</sup>	199.06	101.59 - 161.59	11/7/2019	91.65	107.41
VE-7D <sup>1</sup>	200.11	102.03 - 162.03	11/5/2019	93.65	106.46
VE-10D <sup>1</sup>	198.8	100.66 - 160.66	11/5/2019	94.54	104.26

Notes:

Elevation data per California Coordinate System NADV88

btoc = below top of casing

Dry = No water detected, water detected below the screen interval, or water detected at or near total depth of well

MSL = mean sea level

1. The depth to water shown are based on hand measurements.

**Attachment B, Table B-2**  
**Other Groundwater Pumping Data Collected This Quarter**  
**Omega Chemical Superfund Site**  
**Fourth Quarter 2019**

		Pump Runtime (hrs)	Total Volume Extracted (gal)	Operational Flow Rate <sup>1</sup> (gpm)	Average Flow Rate <sup>2</sup> (gpm)
DPE-3	October 2019	107	29,237	4.54	0.65
	November 2019	93.9	24,988	4.44	0.58
	December 2019	102	29,453	4.83	0.66
	4th Quarter 2019	303	83,678	4.60	0.63
DPE-4	October 2019	120	11,211	1.56	0.25
	November 2019	109	10,263	1.57	0.24
	December 2019	110	11,160	1.69	0.25
	4th Quarter 2019	338	32,635	1.61	0.25
DPE-5	October 2019	155	20,082	2.16	0.45
	November 2019	142	18,291	2.15	0.42
	December 2019	151	22,013	2.42	0.49
	4th Quarter 2019	448	60,385	2.25	0.46
DPE-8	October 2019	165	14,124	1.42	0.32
	November 2019	163	12,664	1.29	0.29
	December 2019	216	16,348	1.26	0.37
	4th Quarter 2019	544	43,136	1.33	0.33
DPE-9	October 2019	294	66,595	3.78	1.49
	November 2019	260	58,599	3.76	1.36
	December 2019	259	66,164	4.26	1.48
	4th Quarter 2019	812	191,358	3.93	1.44

**Attachment B, Table B-2**  
**Other Groundwater Pumping Data Collected This Quarter**  
**Omega Chemical Superfund Site**  
**Fourth Quarter 2019**

		Pump Runtime (hrs)	Total Volume Extracted (gal)	Operational Flow Rate <sup>1</sup> (gpm)	Average Flow Rate <sup>2</sup> (gpm)
VE-7D	October 2019	135	28,962	3.57	0.65
	November 2019	126	27,233	3.62	0.63
	December 2019	73.0	15,037	3.43	0.34
	4th Quarter 2019	334	71,232	3.54	0.54
VE-10D	October 2019	312	72,740	3.89	1.63
	November 2019	301	70,020	3.88	1.62
	December 2019	171	38,731	3.78	0.87
	4th Quarter 2019	784	181,491	3.85	1.37

Notes:

1. Operational flow rate calculated from total gallons processed in the month and hours the pump actually operated in the month.

2. Average flow rate is calculated from total gallons processed in the month and total hours in the month, regardless of pump uptime.

All extraction wells operate on/off based on water levels measured by pressure transducers installed in each well.

hrs = hours

gal = gallons

gpm = gallons per minute

## **ATTACHMENT C**

**Laboratory Analytical Results  
and Data Verification Reports**

**Data Quality Assessment**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**Fourth Quarter 2019**

Sampling Event	Sampling Rationale	Frequency of Analysis	Matrix	Lab WO#	Sampling Date	Field Quality Control Samples	Data Review Level	Review of Laboratory QC Samples	Data Usability
<b>SDLAC Quarterly Sampling</b>									
Q4	Quarterly sampling of the treatment plant effluent is required per Los Angeles County Sanitation District Industrial Waste Discharge Permit Number 20039.	Quarterly	Water	254649	11/14-15/2019	Equipment blanks are not needed as sampling equipment is not used. Trip blanks and field duplicates are not needed for this compliance sampling.	Stage 2A	MB, LCS/LCSD, MS/MSD, surrogates	Results for pH and dissolved sulfide are qualified as estimated (J,UJ). These parameters are 'analyze immediately' parameters. Field measurements should be used. The result for 1,4-dioxane in GRAB was qualified as estimated (J, UJ) due to an unacceptable surrogate recovery and low LCSD recovery. The results for aniline, bis (2-chloroisopropyl) ether, hexachlorobutadiene, hexachlorocyclopentadiene, hexachloroethane, nitrobenzene, n-nitrosodimethylamine, 1,3-dichlorobenzene, and 1,4-dichlorobenzene in GRAB were qualified as estimated (J) due to low LCS recoveries. The result for benzidine was rejected (R) because the recovery in the LCS was less than 10% and the analyte was not detected in the sample. No other qualification of sample results was warranted.
<b>GWTS Process Sampling</b>									
<i>SCAQMD Compliance</i>									
Q4	Sampling of the influent, intermediate, and effluent sample ports of the VPGAC vessels is required monthly for the SCAQMD permit.	Monthly	Air	1910258	10/4/2019	Equipment blanks are not needed as sampling equipment is not used to collect the vapor samples. Trip blanks are not typically submitted with Summa canisters. Field duplicates are not needed for this compliance sampling.	Stage 2B	MB, LCS/LCSD, surrogates	The TNMOC value reported should not be used as TVOC as it is not the sum of the reported concentrations. No other qualification of sample results was warranted.
				1911131	11/5/2019				The TNMOC value reported should not be used as TVOC as it is not the sum of the reported concentrations. No other qualification of sample results was warranted.
				1912186	12/6/2019				The TNMOC value reported should not be used as TVOC as it is not the sum of the reported concentrations. No other qualification of sample results was warranted.
<i>Treatment System Process Sampling</i>									
Q4	Analysis of the influent and effluent samples (before and after the air stripper) from the GWTS are needed to assess the performance of the treatment equipment.	Monthly (monthly for the first year of operation for the influent sample, frequency may change after 1st year); monthly for effluent sample.	Water	251672	10/4/2019	Equipment blanks are not needed as sampling equipment is not used to collect these samples from the sample ports. Field duplicates are not needed for this treatment assessment sampling. Trip blanks were analyzed with these samples and all trip blank results were nondetect.	Stage 2A	MB, LCS/LCSD, MS/MSD, surrogates	The result for 1,4-dioxane in OC_SP220B_EFF_100419 was qualified estimated (J-) due to unacceptable surrogate and LCS recoveries. The result may be biased low. No other qualification of sample results was warranted.
				254042	11/5/2019				The result for 1,4-dioxane in OC_SP220B_EFF_110519 was qualified estimated (J-) due to unacceptable surrogate and LCS recoveries. The result may be biased low. No other qualification of sample results was warranted.
				256836	12/6/2019				The result for 1,4-dioxane in OC_SP220B_EFF_120619 was qualified estimated (J-) due to low surrogate and LCS/LCSD recoveries. The result may be biased low. No other qualification of sample results was warranted.

10/21/2019  
Ms. Jaime Dinello  
DeMaximis, Inc  
1340 Reynolds Ave, Suite 105

Irvine CA 92614

Project Name: Omega - GWCS Monthly GAC  
Project #:  
Workorder #: 1910258

Dear Ms. Jaime Dinello

The following report includes the data for the above referenced project for sample(s) received on 10/8/2019 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner  
Project Manager

**A Eurofins Lancaster Laboratories Company**

**WORK ORDER #:** 1910258

## Work Order Summary

<b>CLIENT:</b>	Ms. Jaime Dinello DeMaximis, Inc 1340 Reynolds Ave, Suite 105 Irvine, CA 92614	<b>BILL TO:</b>	Mr. Tom Dorsey Omega Chemical Site Environmental Remediation Trust 1322 Scott St. Suite 104
<b>PHONE:</b>	949.679.9290	<b>P.O. #</b>	
<b>FAX:</b>	949.679.9078	<b>PROJECT #</b>	Omega - GWCS Monthly GAC
<b>DATE RECEIVED:</b>	10/08/2019	<b>CONTACT:</b>	Kelly Buettner
<b>DATE COMPLETED:</b>	10/21/2019		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	OC_VGAC_EFF_SP242_100419	TO-15	5.3 "Hg	16 psi
02A	OC_VGAC_INT_SP245_100419	TO-15	4.9 "Hg	14.7 psi
03A	OC_VGAC_INF_SP241_100419	TO-15	5.3 "Hg	14.8 psi
04A	Lab Blank	TO-15	NA	NA
05A	CCV	TO-15	NA	NA
06A	LCS	TO-15	NA	NA
06AA	LCSD	TO-15	NA	NA

CERTIFIED BY:



DATE: 10/21/19

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209218, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-18-13, UT NELAP – CA009332019-11, VA NELAP - 460197, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)

Accreditation number: CA300005-011, Effective date: 10/18/2018, Expiration date: 10/17/2019.

Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE  
EPA Method TO-15  
DeMaximis, Inc  
Workorder# 1910258**

Three 1 Liter Summa Canister samples were received on October 08, 2019. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

The TNMOC concentration was calculated by taking the total area counts in the sample and quantitating the area based on the response factor of TNMOC ref. to Heptane (MW=100).

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

## Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

**Client Sample ID: OC\_VGAC\_EFF\_SP242\_100419**

**Lab ID#: 1910258-01A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.3	5.7	7.1	32
Freon 113	1.3	24	9.7	180
1,1-Dichloroethene	1.3	21	5.0	82
Chloroform	1.3	4.6	6.2	22
TNMOC ref. to Heptane (MW=100)	25	63	100	260

**Client Sample ID: OC\_VGAC\_INT\_SP245\_100419**

**Lab ID#: 1910258-02A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.2	4.9	6.7	28
Freon 113	1.2	25	9.2	190
1,1-Dichloroethene	1.2	17	4.7	68
Chloroform	1.2	5.6	5.8	27
TNMOC ref. to Heptane (MW=100)	24	59	98	240

**Client Sample ID: OC\_VGAC\_INF\_SP241\_100419**

**Lab ID#: 1910258-03A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.2	4.7	6.8	26
Freon 113	1.2	19	9.4	150
1,1-Dichloroethene	1.2	14	4.8	56
Chloroform	1.2	4.3	6.0	21
Trichloroethene	1.2	9.0	6.6	48
Tetrachloroethene	1.2	55	8.3	370
TNMOC ref. to Heptane (MW=100)	24	130	100	530



Air Toxics

Client Sample ID: OC\_VGAC\_EFF\_SP242\_100419

Lab ID#: 1910258-01A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101816	Date of Collection:	10/4/19 10:49:00 AM	
Dil. Factor:	2.54	Date of Analysis:	10/18/19 08:33 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.3	Not Detected	6.3	Not Detected
Vinyl Chloride	1.3	Not Detected	3.2	Not Detected
Freon 11	1.3	5.7	7.1	32
Freon 113	1.3	24	9.7	180
1,1-Dichloroethene	1.3	21	5.0	82
2-Propanol	5.1	Not Detected	12	Not Detected
Carbon Disulfide	5.1	Not Detected	16	Not Detected
Methylene Chloride	13	Not Detected	44	Not Detected
Hexane	1.3	Not Detected	4.5	Not Detected
1,1-Dichloroethane	1.3	Not Detected	5.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.1	Not Detected	15	Not Detected
Chloroform	1.3	4.6	6.2	22
1,1,1-Trichloroethane	1.3	Not Detected	6.9	Not Detected
Carbon Tetrachloride	1.3	Not Detected	8.0	Not Detected
Benzene	1.3	Not Detected	4.0	Not Detected
1,2-Dichloroethane	1.3	Not Detected	5.1	Not Detected
Trichloroethene	1.3	Not Detected	6.8	Not Detected
1,4-Dioxane	5.1	Not Detected	18	Not Detected
Toluene	1.3	Not Detected	4.8	Not Detected
1,1,2-Trichloroethane	1.3	Not Detected	6.9	Not Detected
Tetrachloroethene	1.3	Not Detected	8.6	Not Detected
o-Xylene	1.3	Not Detected	5.5	Not Detected
TNMOC ref. to Heptane (MW=100)	25	63	100	260

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	87	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: OC\_VGAC\_INT\_SP245\_100419

Lab ID#: 1910258-02A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101817	Date of Collection:	10/4/19 10:51:00 AM	
Dil. Factor:	2.39	Date of Analysis:	10/18/19 09:01 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.9	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
Freon 11	1.2	4.9	6.7	28
Freon 113	1.2	25	9.2	190
1,1-Dichloroethene	1.2	17	4.7	68
2-Propanol	4.8	Not Detected	12	Not Detected
Carbon Disulfide	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Hexane	1.2	Not Detected	4.2	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	Not Detected	14	Not Detected
Chloroform	1.2	5.6	5.8	27
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.5	Not Detected
Benzene	1.2	Not Detected	3.8	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Trichloroethene	1.2	Not Detected	6.4	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	Not Detected	8.1	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
TNMOC ref. to Heptane (MW=100)	24	59	98	240

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: OC\_VGAC\_INF\_SP241\_100419

Lab ID#: 1910258-03A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101819	Date of Collection:	10/4/19 10:53:00 AM	
Dil. Factor:	2.44	Date of Analysis:	10/18/19 11:02 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	6.0	Not Detected
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
Freon 11	1.2	4.7	6.8	26
Freon 113	1.2	19	9.4	150
1,1-Dichloroethene	1.2	14	4.8	56
2-Propanol	4.9	Not Detected	12	Not Detected
Carbon Disulfide	4.9	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Hexane	1.2	Not Detected	4.3	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.9	Not Detected	14	Not Detected
Chloroform	1.2	4.3	6.0	21
1,1,1-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.7	Not Detected
Benzene	1.2	Not Detected	3.9	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	9.0	6.6	48
1,4-Dioxane	4.9	Not Detected	18	Not Detected
Toluene	1.2	Not Detected	4.6	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Tetrachloroethene	1.2	55	8.3	370
o-Xylene	1.2	Not Detected	5.3	Not Detected
TNMOC ref. to Heptane (MW=100)	24	130	100	530

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1910258-04A

## EPA METHOD TO-15 GC/MS FULL SCAN

<b>File Name:</b>	<b>17101807</b>	<b>Date of Collection: NA</b>		
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 10/18/19 03:19 PM</b>		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
TNMOC ref. to Heptane (MW=100)	10	Not Detected	41	Not Detected

**Container Type: NA - Not Applicable**

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1910258-05A

**EPA METHOD TO-15 GC/MS FULL SCAN**

File Name:	17101802	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/18/19 10:30 AM

Compound	%Recovery
Freon 12	87
Vinyl Chloride	98
Freon 11	91
Freon 113	93
1,1-Dichloroethene	95
2-Propanol	91
Carbon Disulfide	95
Methylene Chloride	99
Hexane	101
1,1-Dichloroethane	96
2-Butanone (Methyl Ethyl Ketone)	107
Chloroform	97
1,1,1-Trichloroethane	91
Carbon Tetrachloride	91
Benzene	102
1,2-Dichloroethane	88
Trichloroethene	98
1,4-Dioxane	100
Toluene	100
1,1,2-Trichloroethane	95
Tetrachloroethene	94
o-Xylene	94
TNMOC ref. to Heptane (MW=100)	100

**Container Type: NA - Not Applicable**

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1910258-06A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101803	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/18/19 10:56 AM
Compound	%Recovery	Method	Limits
Freon 12	81	70-130	
Vinyl Chloride	92	70-130	
Freon 11	83	70-130	
Freon 113	83	70-130	
1,1-Dichloroethene	90	70-130	
2-Propanol	84	70-130	
Carbon Disulfide	90	70-130	
Methylene Chloride	90	70-130	
Hexane	93	70-130	
1,1-Dichloroethane	88	70-130	
2-Butanone (Methyl Ethyl Ketone)	97	70-130	
Chloroform	89	70-130	
1,1,1-Trichloroethane	83	70-130	
Carbon Tetrachloride	85	70-130	
Benzene	94	70-130	
1,2-Dichloroethane	79	70-130	
Trichloroethene	92	70-130	
1,4-Dioxane	99	70-130	
Toluene	93	70-130	
1,1,2-Trichloroethane	92	70-130	
Tetrachloroethene	89	70-130	
o-Xylene	92	70-130	
TNMOC ref. to Heptane (MW=100)	Not Spiked		

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method	Limits
Toluene-d8	99	70-130	
1,2-Dichloroethane-d4	89	70-130	
4-Bromofluorobenzene	98	70-130	



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1910258-06AA

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101804	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/18/19 11:23 AM
<b>Compound</b>			
Freon 12	81	Method Limits	70-130
Vinyl Chloride	95		70-130
Freon 11	83		70-130
Freon 113	85		70-130
1,1-Dichloroethene	88		70-130
2-Propanol	88		70-130
Carbon Disulfide	90		70-130
Methylene Chloride	91		70-130
Hexane	95		70-130
1,1-Dichloroethane	89		70-130
2-Butanone (Methyl Ethyl Ketone)	97		70-130
Chloroform	89		70-130
1,1,1-Trichloroethane	85		70-130
Carbon Tetrachloride	86		70-130
Benzene	95		70-130
1,2-Dichloroethane	80		70-130
Trichloroethene	92		70-130
1,4-Dioxane	99		70-130
Toluene	94		70-130
1,1,2-Trichloroethane	90		70-130
Tetrachloroethene	89		70-130
o-Xylene	92		70-130
TNMOC ref. to Heptane (MW=100)	Not Spiked		

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	96	70-130

1910258

Calscience  
Environmental  
Laboratories, Inc.7440 LINCOLN WAY  
GARDEN GROVE, CA 92841-1427  
TEL.: (714) 895-5494 . FAX: (714) 894-7601

AIR CHAIN OF CUSTODY RECORD																																																																																																																																																																																																																																															
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<p><b>de maximis</b></p> <p>LABORATORY CLIENT:</p> <p>ADDRESS: 1322 Scott St., Suite 104</p> <p>CITY: San Diego</p> <p>STATE: CA ZIP: 92106</p> <p>TELEPHONE: (562) 758-8149 EMAIL: jdinello@demaximis.com</p> <p>PROJECT CONTRACT: Trent Henderson t.henderson@aconandther.com</p> <p>SAMPLER(S) NAME / SIGNATURE: <i>Khris Azer</i></p> <p>TURNAROUND TIME: <input checked="" type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input type="checkbox"/> 5 DAYS <input checked="" type="checkbox"/> 10 DAYS</p> <p>SPECIAL INSTRUCTIONS: <input checked="" type="checkbox"/> EDD</p>																																																																																																																																																																																																																																															
<p><b>AIR TYPE</b></p> <table border="1"> <thead> <tr> <th rowspan="2">SAMPLE ID</th> <th rowspan="2">FIELD ID / Point of Collection</th> <th colspan="3">Sampling Equipment Info</th> <th colspan="3">Start Sampling Information</th> <th colspan="3">Stop Sampling Information</th> <th rowspan="2">REQUESTED ANALYSES</th> </tr> <tr> <th>(0) indoor (A) ambient</th> <th>Canister Size (L)</th> <th>Flow Controller ID#</th> <th>Date</th> <th>Time (24hr clock)</th> <th>Canister Pressure (mbar)</th> <th>Date</th> <th>Time (24hr clock)</th> <th>Canister Pressure (mbar)</th> </tr> </thead> <tbody> <tr> <td>O1A 1</td> <td>OC_VGAC_EFF_SP242_100419</td> <td>SP-EFF-GAC</td> <td>Vapor</td> <td>1L3151</td> <td>1L</td> <td>24335</td> <td>10/4/2019</td> <td>1045</td> <td>-76</td> <td>1049</td> <td>-5</td> <td>X</td> </tr> <tr> <td>O2A 2</td> <td>OC_VGAC_INT_SP245_100419</td> <td>SP-MID-GAC</td> <td>Vapor</td> <td>1L876</td> <td>1L</td> <td>23369</td> <td>10/4/2019</td> <td>1047</td> <td>-76</td> <td>1051</td> <td>-5</td> <td>X</td> </tr> <tr> <td>O3A 3</td> <td>OC_VGAC_INF_SP241_100419</td> <td>SP-INF-GAC</td> <td>Vapor</td> <td>1L1633</td> <td>1L</td> <td>23543</td> <td>10/4/2019</td> <td>1049</td> <td>-76</td> <td>1053</td> <td>-5</td> <td>X</td> </tr> <tr> <td>4</td> <td></td> </tr> <tr> <td>5</td> <td></td> </tr> <tr> <td>6</td> <td></td> </tr> <tr> <td>7</td> <td></td> </tr> <tr> <td>8</td> <td></td> </tr> <tr> <td>9</td> <td></td> </tr> <tr> <td>10</td> <td></td> </tr> <tr> <td>11</td> <td></td> </tr> <tr> <td>12</td> <td></td> </tr> <tr> <td>13</td> <td></td> </tr> <tr> <td>14</td> <td></td> </tr> <tr> <td>15</td> <td></td> </tr> <tr> <td colspan="12"> <p>Received by: (Signature) <i>J. D. Dinello</i> Date: 10/04/19 Time: 10:35 AM</p> <p>Reinquished by: (Signature)</p> <p>Received by: (Signature)</p> <p>Reinquished by: (Signature)</p> </td> </tr> </tbody> </table>												SAMPLE ID	FIELD ID / Point of Collection	Sampling Equipment Info			Start Sampling Information			Stop Sampling Information			REQUESTED ANALYSES	(0) indoor (A) ambient	Canister Size (L)	Flow Controller ID#	Date	Time (24hr clock)	Canister Pressure (mbar)	Date	Time (24hr clock)	Canister Pressure (mbar)	O1A 1	OC_VGAC_EFF_SP242_100419	SP-EFF-GAC	Vapor	1L3151	1L	24335	10/4/2019	1045	-76	1049	-5	X	O2A 2	OC_VGAC_INT_SP245_100419	SP-MID-GAC	Vapor	1L876	1L	23369	10/4/2019	1047	-76	1051	-5	X	O3A 3	OC_VGAC_INF_SP241_100419	SP-INF-GAC	Vapor	1L1633	1L	23543	10/4/2019	1049	-76	1053	-5	X	4													5													6													7													8													9													10													11													12													13													14													15													<p>Received by: (Signature) <i>J. D. Dinello</i> Date: 10/04/19 Time: 10:35 AM</p> <p>Reinquished by: (Signature)</p> <p>Received by: (Signature)</p> <p>Reinquished by: (Signature)</p>											
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Y N None Temp *10:35 AM*

Custody Seal Intact

11/14/2019  
Ms. Jaime Dinello  
DeMaximis, Inc  
1340 Reynolds Ave, Suite 105

Irvine CA 92614

Project Name: Omega - GWCS Monthly GAC  
Project #:  
Workorder #: 1911131

Dear Ms. Jaime Dinello

The following report includes the data for the above referenced project for sample(s) received on 11/7/2019 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner  
Project Manager

**WORK ORDER #:** 1911131

## Work Order Summary

<b>CLIENT:</b>	Ms. Jaime Dinello DeMaximis, Inc 1340 Reynolds Ave, Suite 105 Irvine, CA 92614	<b>BILL TO:</b>	Mr. Tom Dorsey Omega Chemical Site Environmental Remediation Trust 1322 Scott St. Suite 104
<b>PHONE:</b>	949.679.9290	<b>P.O. #</b>	
<b>FAX:</b>	949.679.9078	<b>PROJECT #</b>	Omega - GWCS Monthly GAC
<b>DATE RECEIVED:</b>	11/07/2019	<b>CONTACT:</b>	Kelly Buettner
<b>DATE COMPLETED:</b>	11/14/2019		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	OC_VGAC_EFF_SP242_110519	TO-15	5.0 "Hg	15 psi
02A	OC_VGAC_INT_SP245_110519	TO-15	4.5 "Hg	15 psi
03A	OC_VGAC_INF_SP241_110519	TO-15	5.0 "Hg	15 psi
04A	Lab Blank	TO-15	NA	NA
05A	CCV	TO-15	NA	NA
06A	LCS	TO-15	NA	NA
06AA	LCSD	TO-15	NA	NA

CERTIFIED BY:

DATE: 11/14/19

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209218, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-18-13, UT NELAP – CA009332019-11, VA NELAP - 460197, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)

Accreditation number: CA300005-011, Effective date: 10/18/2019, Expiration date: 10/17/2020.

Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
(916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279

**LABORATORY NARRATIVE  
EPA Method TO-15  
DeMaximis, Inc  
Workorder# 1911131**

Three 1 Liter Summa Canister samples were received on November 07, 2019. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

**Receiving Notes**

The Chain of Custody (COC) was not relinquished properly. A signature, date and time were not provided by the field sampler.

**Analytical Notes**

The TNMOC concentration was calculated by taking the total area counts in the sample and quantitating the area based on the response factor of TNMOC ref. to Heptane (MW=100).

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

## Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

**Client Sample ID: OC\_VGAC\_EFF\_SP242\_110519**

**Lab ID#: 1911131-01A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.2	4.8	6.8	27
Freon 113	1.2	18	9.3	130
1,1-Dichloroethene	1.2	14	4.8	57
Hexane	1.2	3.3	4.3	12
Chloroform	1.2	4.2	5.9	20
TNMOC ref. to Heptane (MW=100)	24	46	99	190

**Client Sample ID: OC\_VGAC\_INT\_SP245\_110519**

**Lab ID#: 1911131-02A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.2	4.7	6.7	26
Freon 113	1.2	20	9.1	160
1,1-Dichloroethene	1.2	12	4.7	48
Chloroform	1.2	4.9	5.8	24
TNMOC ref. to Heptane (MW=100)	24	27	97	110

**Client Sample ID: OC\_VGAC\_INF\_SP241\_110519**

**Lab ID#: 1911131-03A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.2	5.0	6.8	28
Freon 113	1.2	18	9.3	140
1,1-Dichloroethene	1.2	11	4.8	46
Chloroform	1.2	4.6	5.9	22
Trichloroethene	1.2	8.9	6.5	48
Toluene	1.2	2.2	4.6	8.2
Tetrachloroethene	1.2	50	8.2	340
TNMOC ref. to Heptane (MW=100)	24	120	99	490



Air Toxics

Client Sample ID: OC\_VGAC\_EFF\_SP242\_110519

Lab ID#: 1911131-01A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17111218	Date of Collection:	11/5/19 8:25:00 AM	
Dil. Factor:	2.42	Date of Analysis:	11/12/19 06:19 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	6.0	Not Detected
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
Freon 11	1.2	4.8	6.8	27
Freon 113	1.2	18	9.3	130
1,1-Dichloroethene	1.2	14	4.8	57
2-Propanol	4.8	Not Detected	12	Not Detected
Carbon Disulfide	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Hexane	1.2	3.3	4.3	12
1,1-Dichloroethane	1.2	Not Detected	4.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	Not Detected	14	Not Detected
Chloroform	1.2	4.2	5.9	20
1,1,1-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.6	Not Detected
Benzene	1.2	Not Detected	3.9	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	Not Detected	6.5	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Toluene	1.2	Not Detected	4.6	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Tetrachloroethene	1.2	Not Detected	8.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
TNMOC ref. to Heptane (MW=100)	24	46	99	190

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	92	70-130



Air Toxics

Client Sample ID: OC\_VGAC\_INT\_SP245\_110519

Lab ID#: 1911131-02A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17111212	Date of Collection:	11/5/19 8:26:00 AM	
Dil. Factor:	2.38	Date of Analysis:	11/12/19 03:02 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.9	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
Freon 11	1.2	4.7	6.7	26
Freon 113	1.2	20	9.1	160
1,1-Dichloroethene	1.2	12	4.7	48
2-Propanol	4.8	Not Detected	12	Not Detected
Carbon Disulfide	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	41	Not Detected
Hexane	1.2	Not Detected	4.2	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	Not Detected	14	Not Detected
Chloroform	1.2	4.9	5.8	24
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.5	Not Detected
Benzene	1.2	Not Detected	3.8	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Trichloroethene	1.2	Not Detected	6.4	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	Not Detected	8.1	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
TNMOC ref. to Heptane (MW=100)	24	27	97	110

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: OC\_VGAC\_INF\_SP241\_110519

Lab ID#: 1911131-03A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17111213	Date of Collection:	11/5/19 8:27:00 AM	
Dil. Factor:	2.42	Date of Analysis:	11/12/19 03:30 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	6.0	Not Detected
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
Freon 11	1.2	5.0	6.8	28
Freon 113	1.2	18	9.3	140
1,1-Dichloroethene	1.2	11	4.8	46
2-Propanol	4.8	Not Detected	12	Not Detected
Carbon Disulfide	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Hexane	1.2	Not Detected	4.3	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	Not Detected	14	Not Detected
Chloroform	1.2	4.6	5.9	22
1,1,1-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.6	Not Detected
Benzene	1.2	Not Detected	3.9	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	8.9	6.5	48
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Toluene	1.2	2.2	4.6	8.2
1,1,2-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Tetrachloroethene	1.2	50	8.2	340
o-Xylene	1.2	Not Detected	5.2	Not Detected
TNMOC ref. to Heptane (MW=100)	24	120	99	490

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1911131-04A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17111206	Date of Collection:	NA	
Dil. Factor:	1.00	Date of Analysis:	11/12/19 11:40 AM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
TNMOC ref. to Heptane (MW=100)	10	Not Detected	41	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1911131-05A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17111202	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/12/19 09:03 AM

Compound	%Recovery
Freon 12	91
Vinyl Chloride	89
Freon 11	92
Freon 113	83
1,1-Dichloroethene	82
2-Propanol	89
Carbon Disulfide	86
Methylene Chloride	101
Hexane	97
1,1-Dichloroethane	94
2-Butanone (Methyl Ethyl Ketone)	96
Chloroform	96
1,1,1-Trichloroethane	95
Carbon Tetrachloride	96
Benzene	98
1,2-Dichloroethane	93
Trichloroethene	95
1,4-Dioxane	104
Toluene	102
1,1,2-Trichloroethane	95
Tetrachloroethene	93
o-Xylene	98
TNMOC ref. to Heptane (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1911131-06A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17111203	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/12/19 09:30 AM
Compound	%Recovery	Method	Limits
Freon 12	94	70-130	
Vinyl Chloride	92	70-130	
Freon 11	96	70-130	
Freon 113	87	70-130	
1,1-Dichloroethene	85	70-130	
2-Propanol	94	70-130	
Carbon Disulfide	91	70-130	
Methylene Chloride	102	70-130	
Hexane	100	70-130	
1,1-Dichloroethane	99	70-130	
2-Butanone (Methyl Ethyl Ketone)	105	70-130	
Chloroform	99	70-130	
1,1,1-Trichloroethane	99	70-130	
Carbon Tetrachloride	101	70-130	
Benzene	97	70-130	
1,2-Dichloroethane	90	70-130	
Trichloroethene	94	70-130	
1,4-Dioxane	100	70-130	
Toluene	98	70-130	
1,1,2-Trichloroethane	97	70-130	
Tetrachloroethene	91	70-130	
o-Xylene	101	70-130	
TNMOC ref. to Heptane (MW=100)	Not Spiked		

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method	Limits
Toluene-d8	100	70-130	
1,2-Dichloroethane-d4	103	70-130	
4-Bromofluorobenzene	96	70-130	



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1911131-06AA

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17111204	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/12/19 09:57 AM
<hr/>			
Compound	%Recovery	Method	Limits
Freon 12	89	70-130	
Vinyl Chloride	91	70-130	
Freon 11	91	70-130	
Freon 113	84	70-130	
1,1-Dichloroethene	83	70-130	
2-Propanol	93	70-130	
Carbon Disulfide	87	70-130	
Methylene Chloride	96	70-130	
Hexane	97	70-130	
1,1-Dichloroethane	92	70-130	
2-Butanone (Methyl Ethyl Ketone)	97	70-130	
Chloroform	96	70-130	
1,1,1-Trichloroethane	96	70-130	
Carbon Tetrachloride	97	70-130	
Benzene	98	70-130	
1,2-Dichloroethane	93	70-130	
Trichloroethene	98	70-130	
1,4-Dioxane	105	70-130	
Toluene	102	70-130	
1,1,2-Trichloroethane	98	70-130	
Tetrachloroethene	89	70-130	
o-Xylene	100	70-130	
TNMOC ref. to Heptane (MW=100)	Not Spiked		

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method	Limits
Toluene-d8	104	70-130	
1,2-Dichloroethane-d4	100	70-130	
4-Bromofluorobenzene	96	70-130	

**C**alscience  
**E**nvironmental  
**L**aboratories, Inc.

7440 LINCOLN WAY  
 GARDEN GROVE, CA 92841-1427  
 TEL: (714) 895-5484. FAX: (714) 894-7501

LABORATORY CLIENT: de maximis		CLIENT PROJECT NAME / NUMBER: Omega - GWCS Monthly GAC		P.O. NO.:																																																																																																																																																																																																									
ADDRESS: 1322 Scott St., Suite 104		PROJECT ADDRESS: 12820 Whittier Blvd.		LAB CONTACT OR QUOTE NO.:																																																																																																																																																																																																									
CITY: San Diego		STATE: CA	ZIP: 92106	CITY: Whittier																																																																																																																																																																																																									
TEL: (562) 756-8149		EMAIL: jdinello@demaximis.com	STATE: CA	ZIP: 90602																																																																																																																																																																																																									
TURNAROUND TIME: <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input checked="" type="checkbox"/> 5 DAYS <input type="checkbox"/> 10 DAYS		PROJECT CONTACT: Trent Henderson <a href="mailto:tjhenderson@jacobsandtheiner.com">tjhenderson@jacobsandtheiner.com</a>		LAB USE ONLY: <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																																																																																																																																																																																																									
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): <input type="checkbox"/> EDD		SAMPLE(S) NAME / SIGNATURE: <i>Kelvin Aznar</i>		REQUESTED ANALYSES																																																																																																																																																																																																									
<table border="1"> <thead> <tr> <th rowspan="2">LAB USE ONLY SAMPLE ID</th> <th rowspan="2">FIELD ID / Point of Collection</th> <th colspan="2">All Types</th> <th colspan="2">Sampling Equipment Info</th> <th colspan="2">Start Sampling Information</th> <th colspan="2">Stop Sampling Information</th> <th rowspan="2">TO-15 (TAL 2.3)</th> </tr> <tr> <th>(S) Indoor (A) Ambient</th> <th>Canister ID#</th> <th>Canister Size 6L or 1L</th> <th>Flow Controller ID#</th> <th>Date</th> <th>Time (24hr clock) (HH)</th> <th>Canister Pressure (PSI)</th> <th>Date</th> <th>Time (24hr clock) (HH)</th> <th>Canister Pressure (PSI)</th> </tr> </thead> <tbody> <tr> <td>1 OC_VGAC_EFF_SP242_110519</td> <td>SP-EFF-GAC</td> <td>Vapor</td> <td>40883</td> <td>1L</td> <td>23820</td> <td>11/5/2019</td> <td>0820</td> <td>-77</td> <td>11/5/2019</td> <td>0825</td> <td>-5</td> </tr> <tr> <td>2 OC_VGAC_INT_SP245_110519</td> <td>SP-MID-GAC</td> <td>Vapor</td> <td>111692</td> <td>1L</td> <td>23331</td> <td>11/5/2019</td> <td>0821</td> <td>-77</td> <td>11/5/2019</td> <td>0825</td> <td>-5</td> </tr> <tr> <td>3 OC_VGAC_INF_SP241_110519</td> <td>SP-INF-GAC</td> <td>Vapor</td> <td>117868</td> <td>1L</td> <td>24137</td> <td>11/5/2019</td> <td>0823</td> <td>-77</td> <td>11/5/2019</td> <td>0827</td> <td>-5</td> </tr> <tr> <td>4</td> <td></td> </tr> <tr> <td>5</td> <td></td> </tr> <tr> <td>6</td> <td></td> </tr> <tr> <td>7</td> <td></td> </tr> <tr> <td>8</td> <td></td> </tr> <tr> <td>9</td> <td></td> </tr> <tr> <td>10</td> <td></td> </tr> <tr> <td>11</td> <td></td> </tr> <tr> <td>12</td> <td></td> </tr> <tr> <td>13</td> <td></td> </tr> <tr> <td>14</td> <td></td> </tr> <tr> <td>15</td> <td></td> </tr> </tbody> </table>					LAB USE ONLY SAMPLE ID	FIELD ID / Point of Collection	All Types		Sampling Equipment Info		Start Sampling Information		Stop Sampling Information		TO-15 (TAL 2.3)	(S) Indoor (A) Ambient	Canister ID#	Canister Size 6L or 1L	Flow Controller ID#	Date	Time (24hr clock) (HH)	Canister Pressure (PSI)	Date	Time (24hr clock) (HH)	Canister Pressure (PSI)	1 OC_VGAC_EFF_SP242_110519	SP-EFF-GAC	Vapor	40883	1L	23820	11/5/2019	0820	-77	11/5/2019	0825	-5	2 OC_VGAC_INT_SP245_110519	SP-MID-GAC	Vapor	111692	1L	23331	11/5/2019	0821	-77	11/5/2019	0825	-5	3 OC_VGAC_INF_SP241_110519	SP-INF-GAC	Vapor	117868	1L	24137	11/5/2019	0823	-77	11/5/2019	0827	-5	4												5												6												7												8												9												10												11												12												13												14												15											
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Relinquished by: (Signature) <i>J. D. Dinello</i>		Received By: (Signature) <i>K. Aznar</i>		Date: <i>11/07/19</i> Time: <i>09:18</i>																																																																																																																																																																																																									
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AIR CHAIN OF CUSTODY RECORD  
 DATE: 11/05/19  
 PAGE: 1 OF 1

191113

12/16/2019  
Ms. Jaime Dinello  
DeMaximis, Inc  
1340 Reynolds Ave, Suite 105

Irvine CA 92614

Project Name: Omega - GWCS Monthly GAC  
Project #:  
Workorder #: 1912186

Dear Ms. Jaime Dinello

The following report includes the data for the above referenced project for sample(s) received on 12/9/2019 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner  
Project Manager

**WORK ORDER #:** 1912186

## Work Order Summary

<b>CLIENT:</b>	Ms. Jaime Dinello DeMaximis, Inc 1340 Reynolds Ave, Suite 105 Irvine, CA 92614	<b>BILL TO:</b>	Mr. Tom Dorsey Omega Chemical Site Environmental Remediation Trust 1322 Scott St. Suite 104
<b>PHONE:</b>	949.679.9290	<b>P.O. #</b>	
<b>FAX:</b>	949.679.9078	<b>PROJECT #</b>	Omega - GWCS Monthly GAC
<b>DATE RECEIVED:</b>	12/09/2019	<b>CONTACT:</b>	Kelly Buettner
<b>DATE COMPLETED:</b>	12/16/2019		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	OC_VGAC_EFF_SP242_120619	TO-15	3.3 "Hg	16 psi
02A	OC_VGAC_INT_SP245_120619	TO-15	4.5 "Hg	14.9 psi
03A	OC_VGAC_INF_SP241_120619	TO-15	5.7 "Hg	15.5 psi
04A	Lab Blank	TO-15	NA	NA
05A	CCV	TO-15	NA	NA
06A	LCS	TO-15	NA	NA
06AA	LCSD	TO-15	NA	NA

CERTIFIED BY:



DATE: 12/16/19

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209218, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-18-13, UT NELAP – CA009332019-11, VA NELAP - 460197, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)

Accreditation number: CA300005-011, Effective date: 10/18/2019, Expiration date: 10/17/2020.

Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
(916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279

**LABORATORY NARRATIVE  
EPA Method TO-15  
DeMaximis, Inc  
Workorder# 1912186**

Three 1 Liter Summa Canister samples were received on December 09, 2019. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

The TNMOC concentration was calculated by taking the total area counts in the sample and quantitating the area based on the response factor of TNMOC ref. to Heptane (MW=100).

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

## Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

**Client Sample ID: OC\_VGAC\_EFF\_SP242\_120619**

**Lab ID#: 1912186-01A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.2	4.8	6.6	27
Freon 113	1.2	22	9.0	170
1,1-Dichloroethene	1.2	15	4.6	60
Chloroform	1.2	3.7	5.7	18
TNMOC ref. to Heptane (MW=100)	24	68	96	280

**Client Sample ID: OC\_VGAC\_INT\_SP245\_120619**

**Lab ID#: 1912186-02A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.2	4.3	6.6	24
Freon 113	1.2	20	9.1	150
1,1-Dichloroethene	1.2	11	4.7	42
Chloroform	1.2	4.1	5.8	20
TNMOC ref. to Heptane (MW=100)	24	70	97	290

**Client Sample ID: OC\_VGAC\_INF\_SP241\_120619**

**Lab ID#: 1912186-03A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.3	4.8	7.1	27
Freon 113	1.3	19	9.7	150
1,1-Dichloroethene	1.3	13	5.0	52
Chloroform	1.3	4.2	6.2	20
Trichloroethene	1.3	7.5	6.8	40
Tetrachloroethene	1.3	57	8.6	390
TNMOC ref. to Heptane (MW=100)	25	150	100	610



## Air Toxics

Client Sample ID: OC\_VGAC\_EFF\_SP242\_120619

Lab ID#: 1912186-01A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3121207	Date of Collection:	12/6/19 11:55:00 AM	
Dil. Factor:	2.35	Date of Analysis:	12/12/19 01:35 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.8	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
Freon 11	1.2	4.8	6.6	27
Freon 113	1.2	22	9.0	170
1,1-Dichloroethene	1.2	15	4.6	60
2-Propanol	4.7	Not Detected	12	Not Detected
Carbon Disulfide	4.7	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	41	Not Detected
Hexane	1.2	Not Detected	4.1	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.7	Not Detected	14	Not Detected
Chloroform	1.2	3.7	5.7	18
1,1,1-Trichloroethane	1.2	Not Detected	6.4	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.4	Not Detected
Benzene	1.2	Not Detected	3.8	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Trichloroethene	1.2	Not Detected	6.3	Not Detected
1,4-Dioxane	4.7	Not Detected	17	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.4	Not Detected
Tetrachloroethene	1.2	Not Detected	8.0	Not Detected
o-Xylene	1.2	Not Detected	5.1	Not Detected
TNMOC ref. to Heptane (MW=100)	24	68	96	280

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: OC\_VGAC\_INT\_SP245\_120619

Lab ID#: 1912186-02A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3121208	Date of Collection:	12/6/19 11:56:00 AM	
Dil. Factor:	2.37	Date of Analysis:	12/12/19 02:01 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.9	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
Freon 11	1.2	4.3	6.6	24
Freon 113	1.2	20	9.1	150
1,1-Dichloroethene	1.2	11	4.7	42
2-Propanol	4.7	Not Detected	12	Not Detected
Carbon Disulfide	4.7	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	41	Not Detected
Hexane	1.2	Not Detected	4.2	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.7	Not Detected	14	Not Detected
Chloroform	1.2	4.1	5.8	20
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.4	Not Detected
Benzene	1.2	Not Detected	3.8	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Trichloroethene	1.2	Not Detected	6.4	Not Detected
1,4-Dioxane	4.7	Not Detected	17	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	Not Detected	8.0	Not Detected
o-Xylene	1.2	Not Detected	5.1	Not Detected
TNMOC ref. to Heptane (MW=100)	24	70	97	290

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	104	70-130



Air Toxics

Client Sample ID: OC\_VGAC\_INF\_SP241\_120619

Lab ID#: 1912186-03A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3121209	Date of Collection:	12/6/19 11:56:00 AM	
Dil. Factor:	2.54	Date of Analysis:	12/12/19 02:28 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.3	Not Detected	6.3	Not Detected
Vinyl Chloride	1.3	Not Detected	3.2	Not Detected
Freon 11	1.3	4.8	7.1	27
Freon 113	1.3	19	9.7	150
1,1-Dichloroethene	1.3	13	5.0	52
2-Propanol	5.1	Not Detected	12	Not Detected
Carbon Disulfide	5.1	Not Detected	16	Not Detected
Methylene Chloride	13	Not Detected	44	Not Detected
Hexane	1.3	Not Detected	4.5	Not Detected
1,1-Dichloroethane	1.3	Not Detected	5.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.1	Not Detected	15	Not Detected
Chloroform	1.3	4.2	6.2	20
1,1,1-Trichloroethane	1.3	Not Detected	6.9	Not Detected
Carbon Tetrachloride	1.3	Not Detected	8.0	Not Detected
Benzene	1.3	Not Detected	4.0	Not Detected
1,2-Dichloroethane	1.3	Not Detected	5.1	Not Detected
Trichloroethene	1.3	7.5	6.8	40
1,4-Dioxane	5.1	Not Detected	18	Not Detected
Toluene	1.3	Not Detected	4.8	Not Detected
1,1,2-Trichloroethane	1.3	Not Detected	6.9	Not Detected
Tetrachloroethene	1.3	57	8.6	390
o-Xylene	1.3	Not Detected	5.5	Not Detected
TNMOC ref. to Heptane (MW=100)	25	150	100	610

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	105	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1912186-04A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3121206	Date of Collection:	NA	
Dil. Factor:	1.00	Date of Analysis:	12/12/19 12:44 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
TNMOC ref. to Heptane (MW=100)	10	Not Detected	41	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	104	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1912186-05A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3121202	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/12/19 09:54 AM

Compound	%Recovery
Freon 12	101
Vinyl Chloride	91
Freon 11	102
Freon 113	100
1,1-Dichloroethene	92
2-Propanol	83
Carbon Disulfide	97
Methylene Chloride	81
Hexane	86
1,1-Dichloroethane	90
2-Butanone (Methyl Ethyl Ketone)	98
Chloroform	100
1,1,1-Trichloroethane	100
Carbon Tetrachloride	106
Benzene	95
1,2-Dichloroethane	100
Trichloroethene	101
1,4-Dioxane	99
Toluene	99
1,1,2-Trichloroethane	98
Tetrachloroethene	106
o-Xylene	100
TNMOC ref. to Heptane (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	105	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1912186-06A

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3121203	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/12/19 10:19 AM

Compound	%Recovery	Method Limits
Freon 12	97	70-130
Vinyl Chloride	87	70-130
Freon 11	97	70-130
Freon 113	98	70-130
1,1-Dichloroethene	96	70-130
2-Propanol	79	70-130
Carbon Disulfide	92	70-130
Methylene Chloride	76	70-130
Hexane	86	70-130
1,1-Dichloroethane	90	70-130
2-Butanone (Methyl Ethyl Ketone)	89	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	99	70-130
Carbon Tetrachloride	105	70-130
Benzene	93	70-130
1,2-Dichloroethane	96	70-130
Trichloroethene	95	70-130
1,4-Dioxane	94	70-130
Toluene	95	70-130
1,1,2-Trichloroethane	93	70-130
Tetrachloroethene	101	70-130
o-Xylene	96	70-130
TNMOC ref. to Heptane (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1912186-06AA

## EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3121204	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/12/19 10:44 AM
<hr/>			
Compound	%Recovery	Method	Limits
Freon 12	96	70-130	
Vinyl Chloride	87	70-130	
Freon 11	96	70-130	
Freon 113	97	70-130	
1,1-Dichloroethene	94	70-130	
2-Propanol	78	70-130	
Carbon Disulfide	92	70-130	
Methylene Chloride	77	70-130	
Hexane	85	70-130	
1,1-Dichloroethane	88	70-130	
2-Butanone (Methyl Ethyl Ketone)	87	70-130	
Chloroform	96	70-130	
1,1,1-Trichloroethane	94	70-130	
Carbon Tetrachloride	102	70-130	
Benzene	91	70-130	
1,2-Dichloroethane	94	70-130	
Trichloroethene	92	70-130	
1,4-Dioxane	93	70-130	
Toluene	93	70-130	
1,1,2-Trichloroethane	94	70-130	
Tetrachloroethene	101	70-130	
o-Xylene	98	70-130	
TNMOC ref. to Heptane (MW=100)	Not Spiked		

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method	Limits
Toluene-d8	98	70-130	
1,2-Dichloroethane-d4	99	70-130	
4-Bromofluorobenzene	104	70-130	

**Calscience  
Environmental  
Laboratories, Inc.**

7440 LINCOLN WAY  
GARDEN GROVE, CA 92841-1427  
TEL.: (714) 895-5494, FAX: (714) 894-7501

**1912186**

**AIR CHAIN OF CUSTODY RECORD**

DATE: 12/06/19  
PAGE: 1 OF 1

LABORATORY CLIENT: de maximinis		CLIENT PROJECT NAME / NUMBER: Omega - GWCS Monthly GAC		P.O. NO.:																																																																																																																																																																																																																																																					
ADDRESS: 1322 Scott St., Suite 104		PROJECT ADDRESS: 12520 Whittier Blvd.		LAB CONTACT OR QUOTE NO.:																																																																																																																																																																																																																																																					
CITY: San Diego	STATE: CA	ZIP: 92106	CITY: Whittier	STATE: CA																																																																																																																																																																																																																																																					
TEL: (562) 756-8149	EMAIL: jdinello@demaximinis.com	PROJECT CONTACT: Trent Henderson thenderson@jacobandshemar.com		ZIP: 90602																																																																																																																																																																																																																																																					
TURNAROUND TIME: <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input checked="" type="checkbox"/> 5 DAYS <input type="checkbox"/> 10 DAYS		SAMPLER(S) NAME / SIGNATURE: <i>Elvie Armer</i>		LAB USE ONLY: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																																																																																																																																																																																																																																																					
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<table border="1"> <thead> <tr> <th rowspan="2">LAB USE ONLY SAMPLE ID</th> <th rowspan="2">FIELD ID / Point of Collection</th> <th colspan="2">Air Type</th> <th colspan="2">Sampling Equipment Info</th> <th colspan="2">Start Sampling Information</th> <th colspan="2">Stop Sampling Information</th> </tr> <tr> <th>(S) Indoor (A) Ambient</th> <th>Canister ID#</th> <th>Canister Size 6L or 1L</th> <th>Flow Controller ID#</th> <th>Date</th> <th>Time (24hr clock)</th> <th>Canister Pressure (mbar)</th> <th>Date</th> <th>Time (24hr clock)</th> <th>Canister Pressure (mbar)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OC_VGAC_EFF_SP242_120619</td> <td>SP-EFF-GAC</td> <td>Vapor</td> <td>1L3143</td> <td>1L</td> <td>24320</td> <td>12/6/2019</td> <td>1150</td> <td>-27</td> <td>12/6/2019</td> <td>1155</td> <td>-5</td> <td>X</td> </tr> <tr> <td>2</td> <td>OC_VGAC_INT_SP245_120619</td> <td>SP-MD-GAC</td> <td>Vapor</td> <td>1L2636</td> <td>1L</td> <td>-</td> <td>12/6/2019</td> <td>1151</td> <td>-27</td> <td>12/6/2019</td> <td>1154</td> <td>-5</td> <td>X</td> </tr> <tr> <td>3</td> <td>OC_VGAC_INF_SP241_120619</td> <td>SP-INF-GAC</td> <td>Vapor</td> <td>1L1543</td> <td>1L</td> <td>24434</td> <td>12/6/2019</td> <td>1152</td> <td>-26</td> <td>12/6/2019</td> <td>1156</td> <td>-5</td> <td>X</td> </tr> <tr> <td>4</td> <td></td> </tr> <tr> <td>5</td> <td></td> </tr> <tr> <td>6</td> <td></td> </tr> <tr> <td>7</td> <td></td> </tr> <tr> <td>8</td> <td></td> </tr> <tr> <td>9</td> <td></td> </tr> <tr> <td>10</td> <td></td> </tr> <tr> <td>11</td> <td></td> </tr> <tr> <td>12</td> <td></td> </tr> <tr> <td>13</td> <td></td> </tr> <tr> <td>14</td> <td></td> </tr> <tr> <td>15</td> <td></td> </tr> <tr> <td colspan="2">Reimbursement by: (Signature) <i>J. D. Dinello</i></td> <td colspan="2">Received by (Signature) <i>S. G. Armer</i></td> <td>Date: 12/09/19 Time: 09:38</td> </tr> <tr> <td colspan="2">Reimbursement by: (Signature)</td> <td colspan="2">Received by (Signature)</td> <td>Date: Time:</td> </tr> <tr> <td colspan="2">Reimbursement by: (Signature)</td> <td colspan="2">Received by (Signature)</td> <td>Date: Time:</td> </tr> </tbody> </table>					LAB USE ONLY SAMPLE ID	FIELD ID / Point of Collection	Air Type		Sampling Equipment Info		Start Sampling Information		Stop Sampling Information		(S) Indoor (A) Ambient	Canister ID#	Canister Size 6L or 1L	Flow Controller ID#	Date	Time (24hr clock)	Canister Pressure (mbar)	Date	Time (24hr clock)	Canister Pressure (mbar)	1	OC_VGAC_EFF_SP242_120619	SP-EFF-GAC	Vapor	1L3143	1L	24320	12/6/2019	1150	-27	12/6/2019	1155	-5	X	2	OC_VGAC_INT_SP245_120619	SP-MD-GAC	Vapor	1L2636	1L	-	12/6/2019	1151	-27	12/6/2019	1154	-5	X	3	OC_VGAC_INF_SP241_120619	SP-INF-GAC	Vapor	1L1543	1L	24434	12/6/2019	1152	-26	12/6/2019	1156	-5	X	4														5														6														7														8														9														10														11														12														13														14														15														Reimbursement by: (Signature) <i>J. D. Dinello</i>		Received by (Signature) <i>S. G. Armer</i>		Date: 12/09/19 Time: 09:38	Reimbursement by: (Signature)		Received by (Signature)		Date: Time:	Reimbursement by: (Signature)		Received by (Signature)		Date: Time:
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2	OC_VGAC_INT_SP245_120619	SP-MD-GAC	Vapor	1L2636	1L	-	12/6/2019	1151	-27	12/6/2019	1154	-5	X																																																																																																																																																																																																																																												
3	OC_VGAC_INF_SP241_120619	SP-INF-GAC	Vapor	1L1543	1L	24434	12/6/2019	1152	-26	12/6/2019	1156	-5	X																																																																																																																																																																																																																																												
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## ANALYTICAL REPORT

Eurofins TestAmerica, Irvine  
17461 Derian Ave  
Suite 100  
Irvine, CA 92614-5817  
Tel: (949)261-1022

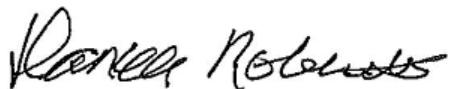
Laboratory Job ID: 440-251672-1

Laboratory Sample Delivery Group: Omega Chemical  
Client Project/Site: Omega Chemical - GWCS Monthly

**For:**

Jacob & Hefner Associates P.C.  
15375 Barranca Parkway, J-101  
Irvine, California 92618

Attn: Trent Henderson



Authorized for release by:  
10/11/2019 1:19:41 PM

Danielle Roberts, Senior Project Manager  
(949)260-3249  
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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## Sample Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
SDG: Omega Chemical

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-251672-1	OC_SP220B_EFF_100419	Water	10/04/19 08:45	10/04/19 11:00	
440-251672-2	OC_SP210_INF_100419	Water	10/04/19 08:55	10/04/19 11:00	
440-251672-3	OC_TB_100419	Water	10/04/19 08:30	10/04/19 11:00	

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# Case Narrative

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
SDG: Omega Chemical

## Job ID: 440-251672-1

Laboratory: Eurofins TestAmerica, Irvine

### Narrative

#### Job Narrative 440-251672-1

### Comments

No additional comments.

### Receipt

The samples were received on 10/4/2019 11:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

### GC/MS VOA

Method 8260B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following sample associated with analytical batch 440-573501 were outside control limits: (440-251778-A-2 MS) and (440-251778-A-2 MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method 8260B: The method blank for analytical batch 440-573501 contained Acetone above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### Organic Prep

Method 3520C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 8270 preparation batch 440-573122.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

## Detection Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
SDG: Omega Chemical

### **Client Sample ID: OC\_SP220B\_EFF\_100419**

### **Lab Sample ID: 440-251672-1**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	16		0.49	ug/L	1		8270C SIM	Total/NA

### **Client Sample ID: OC\_SP210\_INF\_100419**

### **Lab Sample ID: 440-251672-2**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichloro-1,2,2-trifluoroethane	100		20	ug/L	4		8260B	Total/NA
1,1-Dichloroethene	34		4.0	ug/L	4		8260B	Total/NA
Chloroform	13		4.0	ug/L	4		8260B	Total/NA
Tetrachloroethylene	260		4.0	ug/L	4		8260B	Total/NA
Trichloroethylene	28		4.0	ug/L	4		8260B	Total/NA
Trichlorofluoromethane	19		4.0	ug/L	4		8260B	Total/NA

### **Client Sample ID: OC\_TB\_100419**

### **Lab Sample ID: 440-251672-3**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

**Client Sample ID: OC\_SP220B\_EFF\_100419**

**Lab Sample ID: 440-251672-1**

**Matrix: Water**

Date Collected: 10/04/19 08:45

Date Received: 10/04/19 11:00

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L		10/09/19 21:16		1
1,1,1-Trichloroethane	ND		1.0	ug/L		10/09/19 21:16		1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L		10/09/19 21:16		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	ug/L		10/09/19 21:16		1
1,1,2-Trichloroethane	ND		1.0	ug/L		10/09/19 21:16		1
1,1-Dichloroethane	ND		1.0	ug/L		10/09/19 21:16		1
1,1-Dichloroethene	ND		1.0	ug/L		10/09/19 21:16		1
1,1-Dichloropropene	ND		1.0	ug/L		10/09/19 21:16		1
1,2,3-Trichlorobenzene	ND		1.0	ug/L		10/09/19 21:16		1
1,2,3-Trichloropropane	ND		1.0	ug/L		10/09/19 21:16		1
1,2,4-Trichlorobenzene	ND		1.0	ug/L		10/09/19 21:16		1
1,2,4-Trimethylbenzene	ND		1.0	ug/L		10/09/19 21:16		1
1,2-Dibromo-3-Chloropropane	ND		5.0	ug/L		10/09/19 21:16		1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L		10/09/19 21:16		1
1,2-Dichlorobenzene	ND		1.0	ug/L		10/09/19 21:16		1
1,2-Dichloroethane	ND		1.0	ug/L		10/09/19 21:16		1
1,2-Dichloropropene	ND		1.0	ug/L		10/09/19 21:16		1
1,3,5-Trimethylbenzene	ND		1.0	ug/L		10/09/19 21:16		1
1,3-Dichlorobenzene	ND		1.0	ug/L		10/09/19 21:16		1
1,3-Dichloropropane	ND		1.0	ug/L		10/09/19 21:16		1
1,4-Dichlorobenzene	ND		1.0	ug/L		10/09/19 21:16		1
2,2-Dichloropropane	ND		1.0	ug/L		10/09/19 21:16		1
2-Chlorotoluene	ND		1.0	ug/L		10/09/19 21:16		1
4-Chlorotoluene	ND		1.0	ug/L		10/09/19 21:16		1
Benzene	ND		0.50	ug/L		10/09/19 21:16		1
Bromobenzene	ND		1.0	ug/L		10/09/19 21:16		1
Bromochloromethane	ND		1.0	ug/L		10/09/19 21:16		1
Bromodichloromethane	ND		1.0	ug/L		10/09/19 21:16		1
Bromoform	ND		1.0	ug/L		10/09/19 21:16		1
Bromomethane	ND		1.0	ug/L		10/09/19 21:16		1
Carbon tetrachloride	ND		0.50	ug/L		10/09/19 21:16		1
Chlorobenzene	ND		1.0	ug/L		10/09/19 21:16		1
Chloroethane	ND		1.0	ug/L		10/09/19 21:16		1
Chloroform	ND		1.0	ug/L		10/09/19 21:16		1
Chloromethane	ND		1.0	ug/L		10/09/19 21:16		1
cis-1,2-Dichloroethene	ND		1.0	ug/L		10/09/19 21:16		1
cis-1,3-Dichloropropene	ND		0.50	ug/L		10/09/19 21:16		1
Dibromochloromethane	ND		1.0	ug/L		10/09/19 21:16		1
Dibromomethane	ND		1.0	ug/L		10/09/19 21:16		1
Dichlorodifluoromethane	ND		1.0	ug/L		10/09/19 21:16		1
Ethylbenzene	ND		1.0	ug/L		10/09/19 21:16		1
Hexachlorobutadiene	ND		1.0	ug/L		10/09/19 21:16		1
Isopropylbenzene	ND		1.0	ug/L		10/09/19 21:16		1
m,p-Xylene	ND		1.0	ug/L		10/09/19 21:16		1
Methylene Chloride	ND		5.0	ug/L		10/09/19 21:16		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	ug/L		10/09/19 21:16		1
Naphthalene	ND		1.0	ug/L		10/09/19 21:16		1
n-Butylbenzene	ND		1.0	ug/L		10/09/19 21:16		1
N-Propylbenzene	ND		1.0	ug/L		10/09/19 21:16		1

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

**Client Sample ID: OC\_SP220B\_EFF\_100419**

**Lab Sample ID: 440-251672-1**

Matrix: Water

Date Collected: 10/04/19 08:45

Date Received: 10/04/19 11:00

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	ug/L			10/09/19 21:16	1
p-Isopropyltoluene	ND		1.0	ug/L			10/09/19 21:16	1
sec-Butylbenzene	ND		1.0	ug/L			10/09/19 21:16	1
Styrene	ND		1.0	ug/L			10/09/19 21:16	1
tert-Butylbenzene	ND		1.0	ug/L			10/09/19 21:16	1
Tetrachloroethene	ND		1.0	ug/L			10/09/19 21:16	1
Toluene	ND		1.0	ug/L			10/09/19 21:16	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/09/19 21:16	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			10/09/19 21:16	1
Trichloroethene	ND		1.0	ug/L			10/09/19 21:16	1
Trichlorofluoromethane	ND		1.0	ug/L			10/09/19 21:16	1
Vinyl chloride	ND		0.50	ug/L			10/09/19 21:16	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	97		70 - 130				10/09/19 21:16	1
4-Bromofluorobenzene (Surr)	92		80 - 120				10/09/19 21:16	1
Dibromofluoromethane (Surr)	101		76 - 132				10/09/19 21:16	1
Toluene-d8 (Surr)	105		80 - 128				10/09/19 21:16	1

## Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	ug/L			10/10/19 15:45	1
Isopropyl alcohol	ND		250	ug/L			10/10/19 15:45	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	97		70 - 130				10/10/19 15:45	1
4-Bromofluorobenzene (Surr)	85		80 - 120				10/10/19 15:45	1
Dibromofluoromethane (Surr)	110		76 - 132				10/10/19 15:45	1
Toluene-d8 (Surr)	113		80 - 128				10/10/19 15:45	1

## Method: 8270C SIM - 1,4 Dioxane by SIM

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	16		0.49	ug/L		10/08/19 11:59	10/09/19 16:53	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,4-Dioxane-d8 (Surr)	56		27 - 120			10/08/19 11:59	10/09/19 16:53	1

**Client Sample ID: OC\_SP210\_INF\_100419**

**Lab Sample ID: 440-251672-2**

Matrix: Water

Date Collected: 10/04/19 08:55

Date Received: 10/04/19 11:00

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		4.0	ug/L			10/10/19 00:05	4
1,1,1-Trichloroethane	ND		4.0	ug/L			10/10/19 00:05	4
1,1,2,2-Tetrachloroethane	ND		4.0	ug/L			10/10/19 00:05	4
<b>1,1,2-Trichloro-1,2,2-trifluoroetha ne</b>	<b>100</b>		<b>20</b>	<b>ug/L</b>			<b>10/10/19 00:05</b>	<b>4</b>
1,1,2-Trichloroethane	ND		4.0	ug/L			10/10/19 00:05	4
1,1-Dichloroethane	ND		4.0	ug/L			10/10/19 00:05	4
<b>1,1-Dichloroethene</b>	<b>34</b>		<b>4.0</b>	<b>ug/L</b>			<b>10/10/19 00:05</b>	<b>4</b>

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

**Client Sample ID: OC\_SP210\_INF\_100419**

**Lab Sample ID: 440-251672-2**

**Matrix: Water**

Date Collected: 10/04/19 08:55

Date Received: 10/04/19 11:00

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	ND		4.0	ug/L		10/10/19 00:05		4
1,2,3-Trichlorobenzene	ND		4.0	ug/L		10/10/19 00:05		4
1,2,3-Trichloropropane	ND		4.0	ug/L		10/10/19 00:05		4
1,2,4-Trichlorobenzene	ND		4.0	ug/L		10/10/19 00:05		4
1,2,4-Trimethylbenzene	ND		4.0	ug/L		10/10/19 00:05		4
1,2-Dibromo-3-Chloropropane	ND		20	ug/L		10/10/19 00:05		4
1,2-Dibromoethane (EDB)	ND		4.0	ug/L		10/10/19 00:05		4
1,2-Dichlorobenzene	ND		4.0	ug/L		10/10/19 00:05		4
1,2-Dichloroethane	ND		4.0	ug/L		10/10/19 00:05		4
1,2-Dichloropropane	ND		4.0	ug/L		10/10/19 00:05		4
1,3,5-Trimethylbenzene	ND		4.0	ug/L		10/10/19 00:05		4
1,3-Dichlorobenzene	ND		4.0	ug/L		10/10/19 00:05		4
1,3-Dichloropropane	ND		4.0	ug/L		10/10/19 00:05		4
1,4-Dichlorobenzene	ND		4.0	ug/L		10/10/19 00:05		4
2,2-Dichloropropane	ND		4.0	ug/L		10/10/19 00:05		4
2-Chlorotoluene	ND		4.0	ug/L		10/10/19 00:05		4
4-Chlorotoluene	ND		4.0	ug/L		10/10/19 00:05		4
Acetone	ND		40	ug/L		10/10/19 00:05		4
Benzene	ND		2.0	ug/L		10/10/19 00:05		4
Bromobenzene	ND		4.0	ug/L		10/10/19 00:05		4
Bromochloromethane	ND		4.0	ug/L		10/10/19 00:05		4
Bromodichloromethane	ND		4.0	ug/L		10/10/19 00:05		4
Bromoform	ND		4.0	ug/L		10/10/19 00:05		4
Bromomethane	ND		4.0	ug/L		10/10/19 00:05		4
Carbon tetrachloride	ND		2.0	ug/L		10/10/19 00:05		4
Chlorobenzene	ND		4.0	ug/L		10/10/19 00:05		4
Chloroethane	ND		4.0	ug/L		10/10/19 00:05		4
<b>Chloroform</b>	<b>13</b>		4.0	ug/L		10/10/19 00:05		4
Chloromethane	ND		4.0	ug/L		10/10/19 00:05		4
cis-1,2-Dichloroethene	ND		4.0	ug/L		10/10/19 00:05		4
cis-1,3-Dichloropropene	ND		2.0	ug/L		10/10/19 00:05		4
Dibromochloromethane	ND		4.0	ug/L		10/10/19 00:05		4
Dibromomethane	ND		4.0	ug/L		10/10/19 00:05		4
Dichlorodifluoromethane	ND		4.0	ug/L		10/10/19 00:05		4
Ethylbenzene	ND		4.0	ug/L		10/10/19 00:05		4
Hexachlorobutadiene	ND		4.0	ug/L		10/10/19 00:05		4
Isopropyl alcohol	ND		1000	ug/L		10/10/19 00:05		4
Isopropylbenzene	ND		4.0	ug/L		10/10/19 00:05		4
m,p-Xylene	ND		4.0	ug/L		10/10/19 00:05		4
Methylene Chloride	ND		20	ug/L		10/10/19 00:05		4
Methyl-t-Butyl Ether (MTBE)	ND		4.0	ug/L		10/10/19 00:05		4
Naphthalene	ND		4.0	ug/L		10/10/19 00:05		4
n-Butylbenzene	ND		4.0	ug/L		10/10/19 00:05		4
N-Propylbenzene	ND		4.0	ug/L		10/10/19 00:05		4
o-Xylene	ND		4.0	ug/L		10/10/19 00:05		4
p-Isopropyltoluene	ND		4.0	ug/L		10/10/19 00:05		4
sec-Butylbenzene	ND		4.0	ug/L		10/10/19 00:05		4
Styrene	ND		4.0	ug/L		10/10/19 00:05		4
tert-Butylbenzene	ND		4.0	ug/L		10/10/19 00:05		4

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

**Client Sample ID: OC\_SP210\_INF\_100419**

**Lab Sample ID: 440-251672-2**

Matrix: Water

Date Collected: 10/04/19 08:55

Date Received: 10/04/19 11:00

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	260		4.0	ug/L			10/10/19 00:05	4
Toluene	ND		4.0	ug/L			10/10/19 00:05	4
trans-1,2-Dichloroethene	ND		4.0	ug/L			10/10/19 00:05	4
trans-1,3-Dichloropropene	ND		2.0	ug/L			10/10/19 00:05	4
Trichloroethene	28		4.0	ug/L			10/10/19 00:05	4
Trichlorofluoromethane	19		4.0	ug/L			10/10/19 00:05	4
Vinyl chloride	ND		2.0	ug/L			10/10/19 00:05	4
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>		<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	93		70 - 130				10/10/19 00:05	4
4-Bromofluorobenzene (Surr)	93		80 - 120				10/10/19 00:05	4
Dibromofluoromethane (Surr)	106		76 - 132				10/10/19 00:05	4
Toluene-d8 (Surr)	113		80 - 128				10/10/19 00:05	4

**Client Sample ID: OC\_TB\_100419**

**Lab Sample ID: 440-251672-3**

Matrix: Water

Date Collected: 10/04/19 08:30

Date Received: 10/04/19 11:00

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L			10/09/19 21:40	1
1,1,1-Trichloroethane	ND		1.0	ug/L			10/09/19 21:40	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/09/19 21:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	ug/L			10/09/19 21:40	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/09/19 21:40	1
1,1-Dichloroethane	ND		1.0	ug/L			10/09/19 21:40	1
1,1-Dichloroethene	ND		1.0	ug/L			10/09/19 21:40	1
1,1-Dichloropropene	ND		1.0	ug/L			10/09/19 21:40	1
1,2,3-Trichlorobenzene	ND		1.0	ug/L			10/09/19 21:40	1
1,2,3-Trichloropropane	ND		1.0	ug/L			10/09/19 21:40	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/09/19 21:40	1
1,2,4-Trimethylbenzene	ND		1.0	ug/L			10/09/19 21:40	1
1,2-Dibromo-3-Chloropropane	ND		5.0	ug/L			10/09/19 21:40	1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L			10/09/19 21:40	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/09/19 21:40	1
1,2-Dichloroethane	ND		1.0	ug/L			10/09/19 21:40	1
1,2-Dichloropropane	ND		1.0	ug/L			10/09/19 21:40	1
1,3,5-Trimethylbenzene	ND		1.0	ug/L			10/09/19 21:40	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/09/19 21:40	1
1,3-Dichloropropane	ND		1.0	ug/L			10/09/19 21:40	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/09/19 21:40	1
2,2-Dichloropropane	ND		1.0	ug/L			10/09/19 21:40	1
2-Chlorotoluene	ND		1.0	ug/L			10/09/19 21:40	1
4-Chlorotoluene	ND		1.0	ug/L			10/09/19 21:40	1
Acetone	ND		10	ug/L			10/09/19 21:40	1
Benzene	ND		0.50	ug/L			10/09/19 21:40	1
Bromobenzene	ND		1.0	ug/L			10/09/19 21:40	1
Bromochloromethane	ND		1.0	ug/L			10/09/19 21:40	1
Bromodichloromethane	ND		1.0	ug/L			10/09/19 21:40	1
Bromoform	ND		1.0	ug/L			10/09/19 21:40	1

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

**Client Sample ID: OC\_TB\_100419**

**Lab Sample ID: 440-251672-3**

**Matrix: Water**

Date Collected: 10/04/19 08:30

Date Received: 10/04/19 11:00

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		1.0	ug/L		10/09/19 21:40		1
Carbon tetrachloride	ND		0.50	ug/L		10/09/19 21:40		1
Chlorobenzene	ND		1.0	ug/L		10/09/19 21:40		1
Chloroethane	ND		1.0	ug/L		10/09/19 21:40		1
Chloroform	ND		1.0	ug/L		10/09/19 21:40		1
Chloromethane	ND		1.0	ug/L		10/09/19 21:40		1
cis-1,2-Dichloroethene	ND		1.0	ug/L		10/09/19 21:40		1
cis-1,3-Dichloropropene	ND		0.50	ug/L		10/09/19 21:40		1
Dibromochloromethane	ND		1.0	ug/L		10/09/19 21:40		1
Dibromomethane	ND		1.0	ug/L		10/09/19 21:40		1
Dichlorodifluoromethane	ND		1.0	ug/L		10/09/19 21:40		1
Ethylbenzene	ND		1.0	ug/L		10/09/19 21:40		1
Hexachlorobutadiene	ND		1.0	ug/L		10/09/19 21:40		1
Isopropylbenzene	ND		1.0	ug/L		10/09/19 21:40		1
m,p-Xylene	ND		1.0	ug/L		10/09/19 21:40		1
Methylene Chloride	ND		5.0	ug/L		10/09/19 21:40		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	ug/L		10/09/19 21:40		1
Naphthalene	ND		1.0	ug/L		10/09/19 21:40		1
n-Butylbenzene	ND		1.0	ug/L		10/09/19 21:40		1
N-Propylbenzene	ND		1.0	ug/L		10/09/19 21:40		1
o-Xylene	ND		1.0	ug/L		10/09/19 21:40		1
p-Isopropyltoluene	ND		1.0	ug/L		10/09/19 21:40		1
sec-Butylbenzene	ND		1.0	ug/L		10/09/19 21:40		1
Styrene	ND		1.0	ug/L		10/09/19 21:40		1
tert-Butylbenzene	ND		1.0	ug/L		10/09/19 21:40		1
Tetrachloroethene	ND		1.0	ug/L		10/09/19 21:40		1
Toluene	ND		1.0	ug/L		10/09/19 21:40		1
trans-1,2-Dichloroethene	ND		1.0	ug/L		10/09/19 21:40		1
trans-1,3-Dichloropropene	ND		0.50	ug/L		10/09/19 21:40		1
Trichloroethene	ND		1.0	ug/L		10/09/19 21:40		1
Trichlorofluoromethane	ND		1.0	ug/L		10/09/19 21:40		1
Vinyl chloride	ND		0.50	ug/L		10/09/19 21:40		1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	96		70 - 130			10/09/19 21:40		1
4-Bromofluorobenzene (Surr)	94		80 - 120			10/09/19 21:40		1
Dibromofluoromethane (Surr)	98		76 - 132			10/09/19 21:40		1
Toluene-d8 (Surr)	108		80 - 128			10/09/19 21:40		1

## Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropyl alcohol	ND		250	ug/L		10/10/19 16:16		1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	95		70 - 130			10/10/19 16:16		1
4-Bromofluorobenzene (Surr)	84		80 - 120			10/10/19 16:16		1
Dibromofluoromethane (Surr)	107		76 - 132			10/10/19 16:16		1
Toluene-d8 (Surr)	113		80 - 128			10/10/19 16:16		1

Eurofins TestAmerica, Irvine

# Surrogate Summary

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (70-130)	BFB (80-120)	DBFM (76-132)	TOL (80-128)
440-251651-M-1 MS	Matrix Spike	88	90	104	105
440-251651-M-1 MSD	Matrix Spike Duplicate	87	86	101	106
440-251651-M-3 MS	Matrix Spike	90	81	102	104
440-251651-M-3 MSD	Matrix Spike Duplicate	91	88	101	105
440-251672-1	OC_SP220B_EFF_100419	97	92	101	105
440-251672-1 - RA	OC_SP220B_EFF_100419	97	85	110	113
440-251672-2	OC_SP210_INF_100419	93	93	106	113
440-251672-3	OC_TB_100419	96	94	98	108
440-251672-3 - RA	OC_TB_100419	95	84	107	113
440-251778-A-2 MS	Matrix Spike	102	90	103	103
440-251778-A-2 MSD	Matrix Spike Duplicate	104	91	104	102
LCS 440-573486/1002	Lab Control Sample	84	89	102	108
LCS 440-573486/1003	Lab Control Sample	89	84	101	107
LCS 440-573501/1002	Lab Control Sample	99	92	99	98
LCS 440-573568/1002	Lab Control Sample	93	87	104	113
LCS 440-573568/1003	Lab Control Sample	87	89	102	108
MB 440-573486/4	Method Blank	91	91	108	115
MB 440-573501/4	Method Blank	99	92	100	107
MB 440-573568/4	Method Blank	91	90	107	112

### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

## Method: 8270C SIM - 1,4 Dioxane by SIM

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DXE (27-120)			
440-251672-1	OC_SP220B_EFF_100419	56			
LCS 440-573122/3-A	Lab Control Sample	62			
LCSD 440-573122/4-A	Lab Control Sample Dup	73			
MB 440-573122/1-A	Method Blank	64			

### Surrogate Legend

DXE = 1,4-Dioxane-d8 (Surr)

## Method Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
SDG: Omega Chemical

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C SIM	1,4 Dioxane by SIM	SW846	TAL IRV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV

### Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# Lab Chronicle

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

**Client Sample ID: OC\_SP220B\_EFF\_100419**

**Lab Sample ID: 440-251672-1**

**Matrix: Water**

Date Collected: 10/04/19 08:45

Date Received: 10/04/19 11:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	573501	10/09/19 21:16	WC	TAL IRV
Total/NA	Analysis	8260B	RA	1	10 mL	10 mL	573568	10/10/19 15:45	TCN	TAL IRV
Total/NA	Prep	3520C			1015 mL	1.0 mL	573122	10/08/19 11:59	HCK	TAL IRV
Total/NA	Analysis	8270C SIM		1			573433	10/09/19 16:53	JS1	TAL IRV

**Client Sample ID: OC\_SP210\_INF\_100419**

**Lab Sample ID: 440-251672-2**

**Matrix: Water**

Date Collected: 10/04/19 08:55

Date Received: 10/04/19 11:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		4	10 mL	10 mL	573486	10/10/19 00:05	OH1	TAL IRV

**Client Sample ID: OC\_TB\_100419**

**Lab Sample ID: 440-251672-3**

**Matrix: Water**

Date Collected: 10/04/19 08:30

Date Received: 10/04/19 11:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	573501	10/09/19 21:40	WC	TAL IRV
Total/NA	Analysis	8260B	RA	1	10 mL	10 mL	573568	10/10/19 16:16	TCN	TAL IRV

**Laboratory References:**

TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-573486/4**

**Matrix: Water**

**Analysis Batch: 573486**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L		10/09/19 20:34		1
1,1,1-Trichloroethane	ND		1.0	ug/L		10/09/19 20:34		1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L		10/09/19 20:34		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	ug/L		10/09/19 20:34		1
1,1,2-Trichloroethane	ND		1.0	ug/L		10/09/19 20:34		1
1,1-Dichloroethane	ND		1.0	ug/L		10/09/19 20:34		1
1,1-Dichloroethene	ND		1.0	ug/L		10/09/19 20:34		1
1,1-Dichloropropene	ND		1.0	ug/L		10/09/19 20:34		1
1,2,3-Trichlorobenzene	ND		1.0	ug/L		10/09/19 20:34		1
1,2,3-Trichloropropane	ND		1.0	ug/L		10/09/19 20:34		1
1,2,4-Trichlorobenzene	ND		1.0	ug/L		10/09/19 20:34		1
1,2,4-Trimethylbenzene	ND		1.0	ug/L		10/09/19 20:34		1
1,2-Dibromo-3-Chloropropane	ND		5.0	ug/L		10/09/19 20:34		1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L		10/09/19 20:34		1
1,2-Dichlorobenzene	ND		1.0	ug/L		10/09/19 20:34		1
1,2-Dichloroethane	ND		1.0	ug/L		10/09/19 20:34		1
1,2-Dichloropropane	ND		1.0	ug/L		10/09/19 20:34		1
1,3,5-Trimethylbenzene	ND		1.0	ug/L		10/09/19 20:34		1
1,3-Dichlorobenzene	ND		1.0	ug/L		10/09/19 20:34		1
1,3-Dichloropropane	ND		1.0	ug/L		10/09/19 20:34		1
1,4-Dichlorobenzene	ND		1.0	ug/L		10/09/19 20:34		1
2,2-Dichloropropane	ND		1.0	ug/L		10/09/19 20:34		1
2-Chlorotoluene	ND		1.0	ug/L		10/09/19 20:34		1
4-Chlorotoluene	ND		1.0	ug/L		10/09/19 20:34		1
Acetone	ND		10	ug/L		10/09/19 20:34		1
Benzene	ND		0.50	ug/L		10/09/19 20:34		1
Bromobenzene	ND		1.0	ug/L		10/09/19 20:34		1
Bromochloromethane	ND		1.0	ug/L		10/09/19 20:34		1
Bromodichloromethane	ND		1.0	ug/L		10/09/19 20:34		1
Bromoform	ND		1.0	ug/L		10/09/19 20:34		1
Bromomethane	ND		1.0	ug/L		10/09/19 20:34		1
Carbon tetrachloride	ND		0.50	ug/L		10/09/19 20:34		1
Chlorobenzene	ND		1.0	ug/L		10/09/19 20:34		1
Chloroethane	ND		1.0	ug/L		10/09/19 20:34		1
Chloroform	ND		1.0	ug/L		10/09/19 20:34		1
Chloromethane	ND		1.0	ug/L		10/09/19 20:34		1
cis-1,2-Dichloroethene	ND		1.0	ug/L		10/09/19 20:34		1
cis-1,3-Dichloropropene	ND		0.50	ug/L		10/09/19 20:34		1
Dibromochloromethane	ND		1.0	ug/L		10/09/19 20:34		1
Dibromomethane	ND		1.0	ug/L		10/09/19 20:34		1
Dichlorodifluoromethane	ND		1.0	ug/L		10/09/19 20:34		1
Ethylbenzene	ND		1.0	ug/L		10/09/19 20:34		1
Hexachlorobutadiene	ND		1.0	ug/L		10/09/19 20:34		1
Isopropyl alcohol	ND		250	ug/L		10/09/19 20:34		1
Isopropylbenzene	ND		1.0	ug/L		10/09/19 20:34		1
m,p-Xylene	ND		1.0	ug/L		10/09/19 20:34		1
Methylene Chloride	ND		5.0	ug/L		10/09/19 20:34		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	ug/L		10/09/19 20:34		1

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** MB 440-573486/4

**Matrix:** Water

**Analysis Batch:** 573486

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	ug/L			10/09/19 20:34	1
n-Butylbenzene	ND		1.0	ug/L			10/09/19 20:34	1
N-Propylbenzene	ND		1.0	ug/L			10/09/19 20:34	1
o-Xylene	ND		1.0	ug/L			10/09/19 20:34	1
p-Isopropyltoluene	ND		1.0	ug/L			10/09/19 20:34	1
sec-Butylbenzene	ND		1.0	ug/L			10/09/19 20:34	1
Styrene	ND		1.0	ug/L			10/09/19 20:34	1
tert-Butylbenzene	ND		1.0	ug/L			10/09/19 20:34	1
Tetrachloroethene	ND		1.0	ug/L			10/09/19 20:34	1
Toluene	ND		1.0	ug/L			10/09/19 20:34	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/09/19 20:34	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			10/09/19 20:34	1
Trichloroethene	ND		1.0	ug/L			10/09/19 20:34	1
Trichlorofluoromethane	ND		1.0	ug/L			10/09/19 20:34	1
Vinyl chloride	ND		0.50	ug/L			10/09/19 20:34	1
Surrogate	MB %Recovery	MB Qualifier	MB Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		70 - 130				10/09/19 20:34	1
4-Bromofluorobenzene (Surr)	91		80 - 120				10/09/19 20:34	1
Dibromofluoromethane (Surr)	108		76 - 132				10/09/19 20:34	1
Toluene-d8 (Surr)	115		80 - 128				10/09/19 20:34	1

**Lab Sample ID:** LCS 440-573486/1002

**Matrix:** Water

**Analysis Batch:** 573486

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
						Limits	Limits
1,1,1,2-Tetrachloroethane	25.0	28.1		ug/L		112	60 - 141
1,1,1-Trichloroethane	25.0	22.6		ug/L		90	70 - 130
1,1,2,2-Tetrachloroethane	25.0	28.0		ug/L		112	63 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	27.1		ug/L		108	60 - 140
1,1,2-Trichloroethane	25.0	25.8		ug/L		103	70 - 130
1,1-Dichloroethane	25.0	24.8		ug/L		99	64 - 130
1,1-Dichloroethene	25.0	24.0		ug/L		96	70 - 130
1,1-Dichloropropene	25.0	23.8		ug/L		95	70 - 130
1,2,3-Trichlorobenzene	25.0	24.5		ug/L		98	60 - 140
1,2,3-Trichloropropane	25.0	26.0		ug/L		104	63 - 130
1,2,4-Trichlorobenzene	25.0	24.6		ug/L		99	60 - 140
1,2,4-Trimethylbenzene	25.0	24.1		ug/L		96	70 - 135
1,2-Dibromo-3-Chloropropane	25.0	20.7		ug/L		83	52 - 140
1,2-Dibromoethane (EDB)	25.0	26.8		ug/L		107	70 - 130
1,2-Dichlorobenzene	25.0	26.3		ug/L		105	70 - 130
1,2-Dichloroethane	25.0	21.6		ug/L		87	57 - 138
1,2-Dichloropropane	25.0	25.4		ug/L		102	67 - 130
1,3,5-Trimethylbenzene	25.0	24.5		ug/L		98	70 - 136
1,3-Dichlorobenzene	25.0	26.9		ug/L		108	70 - 130
1,3-Dichloropropane	25.0	29.0		ug/L		116	70 - 130
1,4-Dichlorobenzene	25.0	26.9		ug/L		108	70 - 130

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-573486/1002**

**Matrix: Water**

**Analysis Batch: 573486**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,2-Dichloropropane	25.0	22.3		ug/L	89	68 - 141	
2-Chlorotoluene	25.0	23.8		ug/L	95	70 - 130	
4-Chlorotoluene	25.0	24.3		ug/L	97	70 - 130	
Acetone	125	116		ug/L	93	10 - 150	
Benzene	25.0	25.6		ug/L	103	68 - 130	
Bromobenzene	25.0	25.3		ug/L	101	70 - 130	
Bromochloromethane	25.0	26.8		ug/L	107	70 - 130	
Bromodichloromethane	25.0	24.5		ug/L	98	70 - 132	
Bromoform	25.0	27.2		ug/L	109	60 - 148	
Bromomethane	25.0	25.1		ug/L	100	64 - 139	
Carbon tetrachloride	25.0	24.4		ug/L	98	60 - 150	
Chlorobenzene	25.0	28.3		ug/L	113	70 - 130	
Chloroethane	25.0	25.9		ug/L	103	64 - 135	
Chloroform	25.0	23.1		ug/L	92	70 - 130	
Chloromethane	25.0	26.2		ug/L	105	47 - 140	
cis-1,2-Dichloroethene	25.0	25.7		ug/L	103	70 - 133	
cis-1,3-Dichloropropene	25.0	25.6		ug/L	102	70 - 133	
Dibromochloromethane	25.0	27.3		ug/L	109	69 - 145	
Dibromomethane	25.0	24.5		ug/L	98	70 - 130	
Dichlorodifluoromethane	25.0	25.3		ug/L	101	29 - 150	
Ethylbenzene	25.0	27.7		ug/L	111	70 - 130	
Hexachlorobutadiene	25.0	23.9		ug/L	96	10 - 150	
Isopropylbenzene	25.0	26.6		ug/L	106	70 - 136	
m,p-Xylene	25.0	26.7		ug/L	107	70 - 130	
Methylene Chloride	25.0	26.5		ug/L	106	52 - 130	
Methyl-t-Butyl Ether (MTBE)	25.0	21.3		ug/L	85	63 - 131	
Naphthalene	25.0	22.2		ug/L	89	60 - 140	
n-Butylbenzene	25.0	25.7		ug/L	103	65 - 150	
N-Propylbenzene	25.0	25.1		ug/L	100	67 - 139	
o-Xylene	25.0	28.0		ug/L	112	70 - 130	
p-Isopropyltoluene	25.0	26.6		ug/L	106	70 - 132	
sec-Butylbenzene	25.0	26.6		ug/L	106	70 - 138	
Styrene	25.0	25.5		ug/L	102	70 - 134	
tert-Butylbenzene	25.0	24.7		ug/L	99	70 - 130	
Tetrachloroethene	25.0	29.4		ug/L	117	70 - 130	
Toluene	25.0	27.7		ug/L	111	70 - 130	
trans-1,2-Dichloroethene	25.0	26.0		ug/L	104	70 - 130	
trans-1,3-Dichloropropene	25.0	24.5		ug/L	98	70 - 132	
Trichloroethene	25.0	26.6		ug/L	106	70 - 130	
Trichlorofluoromethane	25.0	25.0		ug/L	100	60 - 150	
Vinyl chloride	25.0	28.9		ug/L	115	59 - 133	

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		70 - 130
4-Bromofluorobenzene (Surr)	89		80 - 120
Dibromofluoromethane (Surr)	102		76 - 132
Toluene-d8 (Surr)	108		80 - 128

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-573486/1003**

**Matrix: Water**

**Analysis Batch: 573486**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Isopropyl alcohol	250	269		ug/L	108		49 - 142

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	89		70 - 130
4-Bromofluorobenzene (Surr)	84		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132
Toluene-d8 (Surr)	107		80 - 128

**Lab Sample ID: 440-251651-M-1 MS**

**Matrix: Water**

**Analysis Batch: 573486**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		200	206		ug/L	103	60 - 149	
1,1,1-Trichloroethane	ND		200	177		ug/L	88	70 - 130	
1,1,2,2-Tetrachloroethane	ND		200	231		ug/L	115	63 - 130	
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		200	212		ug/L	106	60 - 140	
1,1,2-Trichloroethane	ND		200	192		ug/L	96	70 - 130	
1,1-Dichloroethane	ND		200	201		ug/L	101	65 - 130	
1,1-Dichloroethene	ND		200	197		ug/L	98	70 - 130	
1,1-Dichloropropene	ND		200	194		ug/L	97	64 - 130	
1,2,3-Trichlorobenzene	ND		200	187		ug/L	93	60 - 140	
1,2,3-Trichloropropane	ND		200	204		ug/L	102	60 - 130	
1,2,4-Trichlorobenzene	ND		200	206		ug/L	103	60 - 140	
1,2,4-Trimethylbenzene	ND		200	182		ug/L	91	70 - 130	
1,2-Dibromo-3-Chloropropane	ND		200	170		ug/L	85	48 - 140	
1,2-Dibromoethane (EDB)	ND		200	197		ug/L	99	70 - 131	
1,2-Dichlorobenzene	ND		200	223		ug/L	112	70 - 130	
1,2-Dichloroethane	ND		200	179		ug/L	89	56 - 146	
1,2-Dichloropropane	ND		200	211		ug/L	106	69 - 130	
1,3,5-Trimethylbenzene	ND		200	180		ug/L	90	70 - 130	
1,3-Dichlorobenzene	ND		200	223		ug/L	112	70 - 130	
1,3-Dichloropropane	ND		200	211		ug/L	106	70 - 130	
1,4-Dichlorobenzene	ND		200	209		ug/L	105	70 - 130	
2,2-Dichloropropane	ND		200	185		ug/L	92	69 - 138	
2-Chlorotoluene	ND		200	186		ug/L	93	70 - 130	
4-Chlorotoluene	ND		200	183		ug/L	92	70 - 130	
Acetone	ND		1000	968		ug/L	97	10 - 150	
Benzene	ND		200	214		ug/L	107	66 - 130	
Bromobenzene	ND		200	195		ug/L	97	70 - 130	
Bromochloromethane	ND		200	222		ug/L	111	70 - 130	
Bromodichloromethane	ND		200	201		ug/L	101	70 - 138	
Bromoform	ND		200	197		ug/L	99	59 - 150	
Bromomethane	ND		200	207		ug/L	104	62 - 131	
Carbon tetrachloride	ND		200	188		ug/L	94	60 - 150	
Chlorobenzene	ND		200	205		ug/L	102	70 - 130	
Chloroethane	ND		200	203		ug/L	101	68 - 130	

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-251651-M-1 MS**

**Matrix: Water**

**Analysis Batch: 573486**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloroform	ND		200	199		ug/L		97	70 - 130		
Chloromethane	ND		200	210		ug/L		105	39 - 144		
cis-1,2-Dichloroethene	210		200	432		ug/L		112	70 - 130		
cis-1,3-Dichloropropene	ND		200	183		ug/L		91	70 - 133		
Dibromochloromethane	ND		200	201		ug/L		101	70 - 148		
Dibromomethane	ND		200	201		ug/L		101	70 - 130		
Dichlorodifluoromethane	ND		200	181		ug/L		90	25 - 142		
Ethylbenzene	ND		200	189		ug/L		95	70 - 130		
Hexachlorobutadiene	ND		200	181		ug/L		91	10 - 150		
Isopropyl alcohol	ND		5000	ND		ug/L		99	46 - 142		
Isopropylbenzene	ND		200	183		ug/L		92	70 - 132		
m,p-Xylene	ND		200	187		ug/L		94	70 - 133		
Methylene Chloride	ND		200	195		ug/L		98	52 - 130		
Methyl-t-Butyl Ether (MTBE)	ND		200	161		ug/L		80	70 - 130		
Naphthalene	ND		200	176		ug/L		88	60 - 140		
n-Butylbenzene	ND		200	205		ug/L		102	61 - 149		
N-Propylbenzene	ND		200	195		ug/L		98	66 - 135		
o-Xylene	ND		200	206		ug/L		103	70 - 133		
p-Isopropyltoluene	ND		200	204		ug/L		102	70 - 130		
sec-Butylbenzene	ND		200	198		ug/L		99	67 - 134		
Styrene	ND		200	171		ug/L		86	29 - 150		
tert-Butylbenzene	ND		200	185		ug/L		92	70 - 130		
Tetrachloroethene	ND		200	226		ug/L		108	70 - 137		
Toluene	ND		200	197		ug/L		99	70 - 130		
trans-1,2-Dichloroethene	ND		200	198		ug/L		99	70 - 130		
trans-1,3-Dichloropropene	ND		200	179		ug/L		89	70 - 138		
Trichloroethene	470		200	710		ug/L		119	70 - 130		
Trichlorofluoromethane	ND		200	196		ug/L		98	60 - 150		
Vinyl chloride	ND		200	222		ug/L		111	50 - 137		
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Surrogate	MS %Recovery	MS Qualifier	MS Limits								
1,2-Dichloroethane-d4 (Surr)	88		70 - 130								
4-Bromofluorobenzene (Surr)	90		80 - 120								
Dibromofluoromethane (Surr)	104		76 - 132								
Toluene-d8 (Surr)	105		80 - 128								

**Lab Sample ID: 440-251651-M-1 MSD**

**Matrix: Water**

**Analysis Batch: 573486**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		200	212		ug/L		106	60 - 149	3	20
1,1,1-Trichloroethane	ND		200	183		ug/L		91	70 - 130	3	20
1,1,2,2-Tetrachloroethane	ND		200	224		ug/L		112	63 - 130	3	30
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		200	218		ug/L		109	60 - 140	3	20
1,1,2-Trichloroethane	ND		200	187		ug/L		94	70 - 130	2	25
1,1-Dichloroethane	ND		200	209		ug/L		104	65 - 130	4	20
1,1-Dichloroethene	ND		200	189		ug/L		94	70 - 130	4	20

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-251651-M-1 MSD**

**Matrix: Water**

**Analysis Batch: 573486**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	RPD Limit
1,1-Dichloropropene	ND		200	202		ug/L		101	64 - 130	4
1,2,3-Trichlorobenzene	ND		200	185		ug/L		93	60 - 140	1
1,2,3-Trichloropropane	ND		200	184		ug/L		92	60 - 130	10
1,2,4-Trichlorobenzene	ND		200	206		ug/L		103	60 - 140	0
1,2,4-Trimethylbenzene	ND		200	177		ug/L		89	70 - 130	3
1,2-Dibromo-3-Chloropropane	ND		200	157		ug/L		78	48 - 140	8
1,2-Dibromoethane (EDB)	ND		200	202		ug/L		101	70 - 131	2
1,2-Dichlorobenzene	ND		200	207		ug/L		103	70 - 130	8
1,2-Dichloroethane	ND		200	177		ug/L		89	56 - 146	1
1,2-Dichloropropane	ND		200	209		ug/L		105	69 - 130	1
1,3,5-Trimethylbenzene	ND		200	182		ug/L		91	70 - 130	1
1,3-Dichlorobenzene	ND		200	200		ug/L		100	70 - 130	11
1,3-Dichloropropane	ND		200	209		ug/L		105	70 - 130	1
1,4-Dichlorobenzene	ND		200	199		ug/L		100	70 - 130	5
2,2-Dichloropropane	ND		200	184		ug/L		92	69 - 138	0
2-Chlorotoluene	ND		200	183		ug/L		91	70 - 130	2
4-Chlorotoluene	ND		200	173		ug/L		87	70 - 130	6
Acetone	ND		1000	1030		ug/L		103	10 - 150	6
Benzene	ND		200	222		ug/L		111	66 - 130	4
Bromobenzene	ND		200	188		ug/L		94	70 - 130	3
Bromochloromethane	ND		200	223		ug/L		111	70 - 130	1
Bromodichloromethane	ND		200	203		ug/L		101	70 - 138	1
Bromoform	ND		200	203		ug/L		101	59 - 150	3
Bromomethane	ND		200	205		ug/L		102	62 - 131	1
Carbon tetrachloride	ND		200	182		ug/L		91	60 - 150	3
Chlorobenzene	ND		200	209		ug/L		105	70 - 130	2
Chloroethane	ND		200	201		ug/L		100	68 - 130	1
Chloroform	ND		200	201		ug/L		98	70 - 130	1
Chloromethane	ND		200	213		ug/L		106	39 - 144	1
cis-1,2-Dichloroethene	210		200	434		ug/L		112	70 - 130	0
cis-1,3-Dichloropropene	ND		200	188		ug/L		94	70 - 133	3
Dibromochloromethane	ND		200	192		ug/L		96	70 - 148	5
Dibromomethane	ND		200	197		ug/L		99	70 - 130	2
Dichlorodifluoromethane	ND		200	196		ug/L		98	25 - 142	8
Ethylbenzene	ND		200	206		ug/L		103	70 - 130	8
Hexachlorobutadiene	ND		200	184		ug/L		92	10 - 150	1
Isopropyl alcohol	ND		5000	5410		ug/L		108	46 - 142	9
Isopropylbenzene	ND		200	190		ug/L		95	70 - 132	4
m,p-Xylene	ND		200	190		ug/L		95	70 - 133	2
Methylene Chloride	ND		200	192		ug/L		96	52 - 130	2
Methyl-t-Butyl Ether (MTBE)	ND		200	166		ug/L		83	70 - 130	3
Naphthalene	ND		200	179		ug/L		89	60 - 140	2
n-Butylbenzene	ND		200	198		ug/L		99	61 - 149	3
N-Propylbenzene	ND		200	188		ug/L		94	66 - 135	4
o-Xylene	ND		200	199		ug/L		99	70 - 133	3
p-Isopropyltoluene	ND		200	197		ug/L		98	70 - 130	4
sec-Butylbenzene	ND		200	199		ug/L		100	67 - 134	1
Styrene	ND		200	182		ug/L		91	29 - 150	6
tert-Butylbenzene	ND		200	182		ug/L		91	70 - 130	2

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-251651-M-1 MSD**

**Matrix: Water**

**Analysis Batch: 573486**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	RPD Limit	
Tetrachloroethene	ND		200	245		ug/L		117	70 - 137	8	20
Toluene	ND		200	211		ug/L		105	70 - 130	7	20
trans-1,2-Dichloroethene	ND		200	203		ug/L		101	70 - 130	2	20
trans-1,3-Dichloropropene	ND		200	179		ug/L		90	70 - 138	0	25
Trichloroethene	470		200	728		ug/L		128	70 - 130	2	20
Trichlorofluoromethane	ND		200	202		ug/L		101	60 - 150	3	25
Vinyl chloride	ND		200	223		ug/L		112	50 - 137	0	30
Surrogate	%Recovery	Qualifer		MSD	MSD	Limits					
1,2-Dichloroethane-d4 (Surr)	87					70 - 130					
4-Bromofluorobenzene (Surr)	86					80 - 120					
Dibromofluoromethane (Surr)	101					76 - 132					
Toluene-d8 (Surr)	106					80 - 128					

**Lab Sample ID: MB 440-573501/4**

**Matrix: Water**

**Analysis Batch: 573501**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L			10/09/19 20:11	1
1,1,1-Trichloroethane	ND		1.0	ug/L			10/09/19 20:11	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/09/19 20:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	ug/L			10/09/19 20:11	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/09/19 20:11	1
1,1-Dichloroethane	ND		1.0	ug/L			10/09/19 20:11	1
1,1-Dichloroethene	ND		1.0	ug/L			10/09/19 20:11	1
1,1-Dichloropropene	ND		1.0	ug/L			10/09/19 20:11	1
1,2,3-Trichlorobenzene	ND		1.0	ug/L			10/09/19 20:11	1
1,2,3-Trichloropropane	ND		1.0	ug/L			10/09/19 20:11	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/09/19 20:11	1
1,2,4-Trimethylbenzene	ND		1.0	ug/L			10/09/19 20:11	1
1,2-Dibromo-3-Chloropropane	ND		5.0	ug/L			10/09/19 20:11	1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L			10/09/19 20:11	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/09/19 20:11	1
1,2-Dichloroethane	ND		1.0	ug/L			10/09/19 20:11	1
1,2-Dichloropropane	ND		1.0	ug/L			10/09/19 20:11	1
1,3,5-Trimethylbenzene	ND		1.0	ug/L			10/09/19 20:11	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/09/19 20:11	1
1,3-Dichloropropane	ND		1.0	ug/L			10/09/19 20:11	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/09/19 20:11	1
2,2-Dichloropropane	ND		1.0	ug/L			10/09/19 20:11	1
2-Chlorotoluene	ND		1.0	ug/L			10/09/19 20:11	1
4-Chlorotoluene	ND		1.0	ug/L			10/09/19 20:11	1
Acetone	10.5		10	ug/L			10/09/19 20:11	1
Benzene	ND		0.50	ug/L			10/09/19 20:11	1
Bromobenzene	ND		1.0	ug/L			10/09/19 20:11	1
Bromochloromethane	ND		1.0	ug/L			10/09/19 20:11	1
Bromodichloromethane	ND		1.0	ug/L			10/09/19 20:11	1

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** MB 440-573501/4

**Matrix:** Water

**Analysis Batch:** 573501

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	ND		1.0	ug/L		10/09/19 20:11		1
Bromomethane	ND		1.0	ug/L		10/09/19 20:11		1
Carbon tetrachloride	ND		0.50	ug/L		10/09/19 20:11		1
Chlorobenzene	ND		1.0	ug/L		10/09/19 20:11		1
Chloroethane	ND		1.0	ug/L		10/09/19 20:11		1
Chloroform	ND		1.0	ug/L		10/09/19 20:11		1
Chloromethane	ND		1.0	ug/L		10/09/19 20:11		1
cis-1,2-Dichloroethene	ND		1.0	ug/L		10/09/19 20:11		1
cis-1,3-Dichloropropene	ND		0.50	ug/L		10/09/19 20:11		1
Dibromochloromethane	ND		1.0	ug/L		10/09/19 20:11		1
Dibromomethane	ND		1.0	ug/L		10/09/19 20:11		1
Dichlorodifluoromethane	ND		1.0	ug/L		10/09/19 20:11		1
Ethylbenzene	ND		1.0	ug/L		10/09/19 20:11		1
Hexachlorobutadiene	ND		1.0	ug/L		10/09/19 20:11		1
Isopropylbenzene	ND		1.0	ug/L		10/09/19 20:11		1
m,p-Xylene	ND		1.0	ug/L		10/09/19 20:11		1
Methylene Chloride	ND		5.0	ug/L		10/09/19 20:11		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	ug/L		10/09/19 20:11		1
Naphthalene	ND		1.0	ug/L		10/09/19 20:11		1
n-Butylbenzene	ND		1.0	ug/L		10/09/19 20:11		1
N-Propylbenzene	ND		1.0	ug/L		10/09/19 20:11		1
o-Xylene	ND		1.0	ug/L		10/09/19 20:11		1
p-Isopropyltoluene	ND		1.0	ug/L		10/09/19 20:11		1
sec-Butylbenzene	ND		1.0	ug/L		10/09/19 20:11		1
Styrene	ND		1.0	ug/L		10/09/19 20:11		1
tert-Butylbenzene	ND		1.0	ug/L		10/09/19 20:11		1
Tetrachloroethene	ND		1.0	ug/L		10/09/19 20:11		1
Toluene	ND		1.0	ug/L		10/09/19 20:11		1
trans-1,2-Dichloroethene	ND		1.0	ug/L		10/09/19 20:11		1
trans-1,3-Dichloropropene	ND		0.50	ug/L		10/09/19 20:11		1
Trichloroethene	ND		1.0	ug/L		10/09/19 20:11		1
Trichlorofluoromethane	ND		1.0	ug/L		10/09/19 20:11		1
Vinyl chloride	ND		0.50	ug/L		10/09/19 20:11		1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 130		10/09/19 20:11	1
4-Bromofluorobenzene (Surr)	92		80 - 120		10/09/19 20:11	1
Dibromofluoromethane (Surr)	100		76 - 132		10/09/19 20:11	1
Toluene-d8 (Surr)	107		80 - 128		10/09/19 20:11	1

**Lab Sample ID:** LCS 440-573501/1002

**Matrix:** Water

**Analysis Batch:** 573501

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
1,1,1,2-Tetrachloroethane	25.0	25.3		ug/L		101	60 - 141
1,1,1-Trichloroethane	25.0	26.1		ug/L		105	70 - 130
1,1,2,2-Tetrachloroethane	25.0	25.2		ug/L		101	63 - 130

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-573501/1002**

**Matrix: Water**

**Analysis Batch: 573501**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
				ug/L		99	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	24.7					
1,1,2-Trichloroethane	25.0	25.3		ug/L		101	70 - 130
1,1-Dichloroethane	25.0	26.3		ug/L		105	64 - 130
1,1-Dichloroethene	25.0	24.3		ug/L		97	70 - 130
1,1-Dichloropropene	25.0	25.4		ug/L		102	70 - 130
1,2,3-Trichlorobenzene	25.0	24.3		ug/L		97	60 - 140
1,2,3-Trichloropropane	25.0	24.5		ug/L		98	63 - 130
1,2,4-Trichlorobenzene	25.0	24.4		ug/L		98	60 - 140
1,2,4-Trimethylbenzene	25.0	25.3		ug/L		101	70 - 135
1,2-Dibromo-3-Chloropropane	25.0	22.0		ug/L		88	52 - 140
1,2-Dibromoethane (EDB)	25.0	25.6		ug/L		103	70 - 130
1,2-Dichlorobenzene	25.0	24.8		ug/L		99	70 - 130
1,2-Dichloroethane	25.0	25.6		ug/L		102	57 - 138
1,2-Dichloropropane	25.0	26.4		ug/L		106	67 - 130
1,3,5-Trimethylbenzene	25.0	25.0		ug/L		100	70 - 136
1,3-Dichlorobenzene	25.0	24.3		ug/L		97	70 - 130
1,3-Dichloropropane	25.0	25.8		ug/L		103	70 - 130
1,4-Dichlorobenzene	25.0	24.8		ug/L		99	70 - 130
2,2-Dichloropropane	25.0	26.3		ug/L		105	68 - 141
2-Chlorotoluene	25.0	23.4		ug/L		94	70 - 130
4-Chlorotoluene	25.0	23.9		ug/L		96	70 - 130
Acetone	125	144		ug/L		115	10 - 150
Benzene	25.0	26.8		ug/L		107	68 - 130
Bromobenzene	25.0	24.1		ug/L		96	70 - 130
Bromochloromethane	25.0	28.3		ug/L		113	70 - 130
Bromodichloromethane	25.0	26.3		ug/L		105	70 - 132
Bromoform	25.0	26.6		ug/L		107	60 - 148
Bromomethane	25.0	22.8		ug/L		91	64 - 139
Carbon tetrachloride	25.0	25.5		ug/L		102	60 - 150
Chlorobenzene	25.0	24.8		ug/L		99	70 - 130
Chloroethane	25.0	23.7		ug/L		95	64 - 135
Chloroform	25.0	25.1		ug/L		101	70 - 130
Chloromethane	25.0	23.1		ug/L		92	47 - 140
cis-1,2-Dichloroethene	25.0	24.8		ug/L		99	70 - 133
cis-1,3-Dichloropropene	25.0	25.2		ug/L		101	70 - 133
Dibromochloromethane	25.0	26.4		ug/L		106	69 - 145
Dibromomethane	25.0	26.9		ug/L		107	70 - 130
Dichlorodifluoromethane	25.0	21.1		ug/L		85	29 - 150
Ethylbenzene	25.0	25.7		ug/L		103	70 - 130
Hexachlorobutadiene	25.0	25.3		ug/L		101	10 - 150
Isopropylbenzene	25.0	26.5		ug/L		106	70 - 136
m,p-Xylene	25.0	26.2		ug/L		105	70 - 130
Methylene Chloride	25.0	25.2		ug/L		101	52 - 130
Methyl-t-Butyl Ether (MTBE)	25.0	27.3		ug/L		109	63 - 131
Naphthalene	25.0	25.8		ug/L		103	60 - 140
n-Butylbenzene	25.0	25.8		ug/L		103	65 - 150
N-Propylbenzene	25.0	24.6		ug/L		98	67 - 139
o-Xylene	25.0	25.2		ug/L		101	70 - 130

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-573501/1002**

**Matrix: Water**

**Analysis Batch: 573501**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
p-Isopropyltoluene	25.0	25.9		ug/L		104	70 - 132
sec-Butylbenzene	25.0	26.0		ug/L		104	70 - 138
Styrene	25.0	25.2		ug/L		101	70 - 134
tert-Butylbenzene	25.0	25.3		ug/L		101	70 - 130
Tetrachloroethene	25.0	26.2		ug/L		105	70 - 130
Toluene	25.0	26.0		ug/L		104	70 - 130
trans-1,2-Dichloroethene	25.0	24.1		ug/L		96	70 - 130
trans-1,3-Dichloropropene	25.0	25.7		ug/L		103	70 - 132
Trichloroethene	25.0	25.4		ug/L		102	70 - 130
Trichlorofluoromethane	25.0	23.7		ug/L		95	60 - 150
Vinyl chloride	25.0	26.0		ug/L		104	59 - 133

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	92		80 - 120
Dibromofluoromethane (Surr)	99		76 - 132
Toluene-d8 (Surr)	98		80 - 128

**Lab Sample ID: 440-251778-A-2 MS**

**Matrix: Water**

**Analysis Batch: 573501**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,1,1,2-Tetrachloroethane	ND		200	215		ug/L		107	60 - 149
1,1,1-Trichloroethane	ND		200	219		ug/L		110	70 - 130
1,1,2,2-Tetrachloroethane	ND		200	212		ug/L		106	63 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		200	189		ug/L		94	60 - 140
1,1,2-Trichloroethane	ND		200	209		ug/L		104	70 - 130
1,1-Dichloroethane	ND		200	220		ug/L		110	65 - 130
1,1-Dichloroethene	ND	F1	200	331	F1	ug/L		166	70 - 130
1,1-Dichloropropene	ND		200	213		ug/L		107	64 - 130
1,2,3-Trichlorobenzene	ND		200	200		ug/L		100	60 - 140
1,2,3-Trichloropropane	ND		200	192		ug/L		96	60 - 130
1,2,4-Trichlorobenzene	ND		200	196		ug/L		98	60 - 140
1,2,4-Trimethylbenzene	ND		200	212		ug/L		106	70 - 130
1,2-Dibromo-3-Chloropropane	ND		200	173		ug/L		86	48 - 140
1,2-Dibromoethane (EDB)	ND		200	202		ug/L		101	70 - 131
1,2-Dichlorobenzene	ND		200	204		ug/L		102	70 - 130
1,2-Dichloroethane	ND		200	209		ug/L		104	56 - 146
1,2-Dichloropropane	ND		200	232		ug/L		116	69 - 130
1,3,5-Trimethylbenzene	ND		200	205		ug/L		102	70 - 130
1,3-Dichlorobenzene	ND		200	202		ug/L		101	70 - 130
1,3-Dichloropropane	ND		200	217		ug/L		109	70 - 130
1,4-Dichlorobenzene	ND		200	205		ug/L		102	70 - 130
2,2-Dichloropropane	ND		200	223		ug/L		112	69 - 138
2-Chlorotoluene	ND		200	194		ug/L		97	70 - 130
4-Chlorotoluene	ND		200	196		ug/L		98	70 - 130
Acetone	ND		1000	1290		ug/L		129	10 - 150

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-251778-A-2 MS**

**Matrix: Water**

**Analysis Batch: 573501**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Benzene	ND		200	227		ug/L	114	66 - 130	
Bromobenzene	ND		200	191		ug/L	95	70 - 130	
Bromochloromethane	ND		200	235		ug/L	118	70 - 130	
Bromodichloromethane	ND		200	228		ug/L	114	70 - 138	
Bromoform	ND		200	209		ug/L	104	59 - 150	
Bromomethane	ND		200	192		ug/L	96	62 - 131	
Carbon tetrachloride	ND		200	211		ug/L	106	60 - 150	
Chlorobenzene	ND		200	211		ug/L	105	70 - 130	
Chloroethane	ND		200	209		ug/L	104	68 - 130	
Chloroform	ND		200	211		ug/L	105	70 - 130	
Chloromethane	ND		200	188		ug/L	94	39 - 144	
cis-1,2-Dichloroethene	ND		200	223		ug/L	111	70 - 130	
cis-1,3-Dichloropropene	ND		200	205		ug/L	103	70 - 133	
Dibromochloromethane	ND		200	204		ug/L	102	70 - 148	
Dibromomethane	ND		200	210		ug/L	105	70 - 130	
Dichlorodifluoromethane	ND		200	155		ug/L	78	25 - 142	
Ethylbenzene	ND		200	220		ug/L	110	70 - 130	
Hexachlorobutadiene	ND		200	210		ug/L	105	10 - 150	
Isopropylbenzene	ND		200	232		ug/L	116	70 - 132	
m,p-Xylene	ND		200	218		ug/L	109	70 - 133	
Methylene Chloride	ND		200	202		ug/L	101	52 - 130	
Methyl-t-Butyl Ether (MTBE)	ND		200	210		ug/L	105	70 - 130	
Naphthalene	ND		200	206		ug/L	103	60 - 140	
n-Butylbenzene	ND		200	218		ug/L	109	61 - 149	
N-Propylbenzene	ND		200	210		ug/L	105	66 - 135	
o-Xylene	ND		200	208		ug/L	104	70 - 133	
p-Isopropyltoluene	ND		200	214		ug/L	107	70 - 130	
sec-Butylbenzene	ND		200	215		ug/L	108	67 - 134	
Styrene	ND		200	206		ug/L	103	29 - 150	
tert-Butylbenzene	ND		200	208		ug/L	104	70 - 130	
Tetrachloroethene	ND		200	233		ug/L	114	70 - 137	
Toluene	ND		200	222		ug/L	111	70 - 130	
trans-1,2-Dichloroethene	ND		200	203		ug/L	102	70 - 130	
trans-1,3-Dichloropropene	ND		200	207		ug/L	103	70 - 138	
Trichloroethene	300		200	528		ug/L	112	70 - 130	
Trichlorofluoromethane	ND		200	205		ug/L	102	60 - 150	
Vinyl chloride	ND		200	208		ug/L	104	50 - 137	

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 130
4-Bromofluorobenzene (Surr)	90		80 - 120
Dibromofluoromethane (Surr)	103		76 - 132
Toluene-d8 (Surr)	103		80 - 128

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-251778-A-2 MSD**

**Matrix: Water**

**Analysis Batch: 573501**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		200	209		ug/L		105	60 - 149	3	20
1,1,1-Trichloroethane	ND		200	225		ug/L		113	70 - 130	3	20
1,1,2,2-Tetrachloroethane	ND		200	216		ug/L		108	63 - 130	2	30
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		200	185		ug/L		92	60 - 140	2	20
1,1,2-Trichloroethane	ND		200	221		ug/L		110	70 - 130	6	25
1,1-Dichloroethane	ND		200	224		ug/L		112	65 - 130	2	20
1,1-Dichloroethene	ND F1		200	331 F1		ug/L		166	70 - 130	0	20
1,1-Dichloropropene	ND		200	219		ug/L		110	64 - 130	3	20
1,2,3-Trichlorobenzene	ND		200	206		ug/L		103	60 - 140	3	20
1,2,3-Trichloropropane	ND		200	210		ug/L		105	60 - 130	9	30
1,2,4-Trichlorobenzene	ND		200	204		ug/L		102	60 - 140	4	20
1,2,4-Trimethylbenzene	ND		200	216		ug/L		108	70 - 130	2	25
1,2-Dibromo-3-Chloropropane	ND		200	184		ug/L		92	48 - 140	6	30
1,2-Dibromoethane (EDB)	ND		200	211		ug/L		106	70 - 131	5	25
1,2-Dichlorobenzene	ND		200	206		ug/L		103	70 - 130	1	20
1,2-Dichloroethane	ND		200	209		ug/L		104	56 - 146	0	20
1,2-Dichloropropane	ND		200	231		ug/L		116	69 - 130	1	20
1,3,5-Trimethylbenzene	ND		200	214		ug/L		107	70 - 130	4	20
1,3-Dichlorobenzene	ND		200	213		ug/L		106	70 - 130	5	20
1,3-Dichloropropane	ND		200	216		ug/L		108	70 - 130	1	25
1,4-Dichlorobenzene	ND		200	210		ug/L		105	70 - 130	3	20
2,2-Dichloropropane	ND		200	223		ug/L		112	69 - 138	0	25
2-Chlorotoluene	ND		200	204		ug/L		102	70 - 130	5	20
4-Chlorotoluene	ND		200	203		ug/L		101	70 - 130	3	20
Acetone	ND		1000	1360		ug/L		136	10 - 150	5	35
Benzene	ND		200	234		ug/L		117	66 - 130	3	20
Bromobenzene	ND		200	203		ug/L		101	70 - 130	6	20
Bromochloromethane	ND		200	244		ug/L		122	70 - 130	4	25
Bromodichloromethane	ND		200	223		ug/L		111	70 - 138	2	20
Bromoform	ND		200	214		ug/L		107	59 - 150	3	25
Bromomethane	ND		200	192		ug/L		96	62 - 131	0	25
Carbon tetrachloride	ND		200	223		ug/L		111	60 - 150	5	25
Chlorobenzene	ND		200	215		ug/L		108	70 - 130	2	20
Chloroethane	ND		200	201		ug/L		100	68 - 130	4	25
Chloroform	ND		200	220		ug/L		110	70 - 130	4	20
Chloromethane	ND		200	191		ug/L		96	39 - 144	1	25
cis-1,2-Dichloroethene	ND		200	223		ug/L		112	70 - 130	0	20
cis-1,3-Dichloropropene	ND		200	212		ug/L		106	70 - 133	3	20
Dibromochloromethane	ND		200	211		ug/L		106	70 - 148	4	25
Dibromomethane	ND		200	216		ug/L		108	70 - 130	3	25
Dichlorodifluoromethane	ND		200	152		ug/L		76	25 - 142	2	30
Ethylbenzene	ND		200	223		ug/L		111	70 - 130	1	20
Hexachlorobutadiene	ND		200	220		ug/L		110	10 - 150	4	20
Isopropylbenzene	ND		200	223		ug/L		112	70 - 132	4	20
m,p-Xylene	ND		200	219		ug/L		110	70 - 133	0	25
Methylene Chloride	ND		200	199		ug/L		100	52 - 130	2	20
Methyl-t-Butyl Ether (MTBE)	ND		200	216		ug/L		108	70 - 130	3	25
Naphthalene	ND		200	215		ug/L		107	60 - 140	4	30

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-251778-A-2 MSD**

**Matrix: Water**

**Analysis Batch: 573501**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	RPD Limit
n-Butylbenzene	ND		200	219		ug/L		109	61 - 149	0 20
N-Propylbenzene	ND		200	209		ug/L		104	66 - 135	1 20
o-Xylene	ND		200	220		ug/L		110	70 - 133	6 20
p-Isopropyltoluene	ND		200	218		ug/L		109	70 - 130	2 20
sec-Butylbenzene	ND		200	221		ug/L		111	67 - 134	3 20
Styrene	ND		200	207		ug/L		104	29 - 150	1 35
tert-Butylbenzene	ND		200	211		ug/L		105	70 - 130	1 20
Tetrachloroethene	ND		200	244		ug/L		119	70 - 137	4 20
Toluene	ND		200	229		ug/L		115	70 - 130	4 20
trans-1,2-Dichloroethene	ND		200	209		ug/L		105	70 - 130	3 20
trans-1,3-Dichloropropene	ND		200	213		ug/L		107	70 - 138	3 25
Trichloroethene	300		200	534		ug/L		115	70 - 130	1 20
Trichlorofluoromethane	ND		200	205		ug/L		103	60 - 150	0 25
Vinyl chloride	ND		200	211		ug/L		106	50 - 137	2 30
<b>MSD MSD</b>										
Surrogate	%Recovery	Qualifier	<b>Limits</b>							
1,2-Dichloroethane-d4 (Surr)	104		70 - 130							
4-Bromofluorobenzene (Surr)	91		80 - 120							
Dibromofluoromethane (Surr)	104		76 - 132							
Toluene-d8 (Surr)	102		80 - 128							

**Lab Sample ID: MB 440-573568/4**

**Matrix: Water**

**Analysis Batch: 573568**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Acetone	ND		10	ug/L			10/10/19 09:15	1		
Isopropyl alcohol	ND		250	ug/L			10/10/19 09:15	1		
<b>MB MB</b>										
Surrogate	%Recovery	Qualifier	<b>Limits</b>							
1,2-Dichloroethane-d4 (Surr)	91		70 - 130							
4-Bromofluorobenzene (Surr)	90		80 - 120							
Dibromofluoromethane (Surr)	107		76 - 132							
Toluene-d8 (Surr)	112		80 - 128							

**Lab Sample ID: LCS 440-573568/1002**

**Matrix: Water**

**Analysis Batch: 573568**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits		
Acetone		125	143		ug/L		114	10 - 150		
<b>LCS LCS</b>										
Surrogate	%Recovery	Qualifier	<b>Limits</b>							
1,2-Dichloroethane-d4 (Surr)	93		70 - 130							
4-Bromofluorobenzene (Surr)	87		80 - 120							
Dibromofluoromethane (Surr)	104		76 - 132							
Toluene-d8 (Surr)	113		80 - 128							

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-573568/1003**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

**Matrix: Water**

**Analysis Batch: 573568**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Isopropyl alcohol	250	245	J	ug/L	98	49 - 142	

**LCS LCS**

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	87		70 - 130
4-Bromofluorobenzene (Surr)	89		80 - 120
Dibromofluoromethane (Surr)	102		76 - 132
Toluene-d8 (Surr)	108		80 - 128

**Lab Sample ID: 440-251651-M-3 MS**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

**Matrix: Water**

**Analysis Batch: 573568**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		5000	4780		ug/L	96	10 - 150	
Isopropyl alcohol	ND		25000	ND		ug/L	99	46 - 142	

**MS MS**

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		70 - 130
4-Bromofluorobenzene (Surr)	81		80 - 120
Dibromofluoromethane (Surr)	102		76 - 132
Toluene-d8 (Surr)	104		80 - 128

**Lab Sample ID: 440-251651-M-3 MSD**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

**Matrix: Water**

**Analysis Batch: 573568**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		5000	4870		ug/L	97	10 - 150		2	35
Isopropyl alcohol	ND		25000	26400		ug/L	106	46 - 142		6	40

**MSD MSD**

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		70 - 130
4-Bromofluorobenzene (Surr)	88		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132
Toluene-d8 (Surr)	105		80 - 128

## Method: 8270C SIM - 1,4 Dioxane by SIM

**Lab Sample ID: MB 440-573122/1-A**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 573122**

**Matrix: Water**

**Analysis Batch: 573433**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	ug/L		10/08/19 11:59	10/09/19 15:49	1

**MB MB**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	64		27 - 120	10/08/19 11:59	10/09/19 15:49	1

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## **Method: 8270C SIM - 1,4 Dioxane by SIM (Continued)**

**Lab Sample ID: LCS 440-573122/3-A**

**Matrix: Water**

**Analysis Batch: 573433**

Analyte		Spike	LCS	LCS	Unit	D	%Rec	%Rec.	Limits
		Added	Result	Qualifier					
1,4-Dioxane		2.00	1.25		ug/L	63	36 - 120		
<b>Surrogate</b>									
<b>1,4-Dioxane-d8 (Surr)</b>									
		LCS	LCS						
		%Recovery	Qualifier						
		62							
				Limits					
				27 - 120					

**Lab Sample ID: LCSD 440-573122/4-A**

**Matrix: Water**

**Analysis Batch: 573433**

Analyte		Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.	RPD	RPD	Limit
		Added	Result	Qualifier							
1,4-Dioxane		2.00	1.45		ug/L	72	36 - 120		14	14	35
<b>Surrogate</b>											
<b>1,4-Dioxane-d8 (Surr)</b>											
		LCSD	LCSD								
		%Recovery	Qualifier								
		73									
				Limits							
				27 - 120							

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 573122**

**%Rec.**

**Limits**

**36 - 120**

**63**

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15

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 573122**

**%Rec.**

**RPD**

**14**

**35**

# QC Association Summary

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
 SDG: Omega Chemical

## GC/MS VOA

### Analysis Batch: 573486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-251672-2	OC_SP210_INF_100419	Total/NA	Water	8260B	
MB 440-573486/4	Method Blank	Total/NA	Water	8260B	
LCS 440-573486/1002	Lab Control Sample	Total/NA	Water	8260B	
LCS 440-573486/1003	Lab Control Sample	Total/NA	Water	8260B	
440-251651-M-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-251651-M-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 573501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-251672-1	OC_SP220B_EFF_100419	Total/NA	Water	8260B	
440-251672-3	OC_TB_100419	Total/NA	Water	8260B	
MB 440-573501/4	Method Blank	Total/NA	Water	8260B	
LCS 440-573501/1002	Lab Control Sample	Total/NA	Water	8260B	
440-251778-A-2 MS	Matrix Spike	Total/NA	Water	8260B	
440-251778-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 573568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-251672-1 - RA	OC_SP220B_EFF_100419	Total/NA	Water	8260B	
440-251672-3 - RA	OC_TB_100419	Total/NA	Water	8260B	
MB 440-573568/4	Method Blank	Total/NA	Water	8260B	
LCS 440-573568/1002	Lab Control Sample	Total/NA	Water	8260B	
LCS 440-573568/1003	Lab Control Sample	Total/NA	Water	8260B	
440-251651-M-3 MS	Matrix Spike	Total/NA	Water	8260B	
440-251651-M-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 573122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-251672-1	OC_SP220B_EFF_100419	Total/NA	Water	3520C	
MB 440-573122/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-573122/3-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-573122/4-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 573433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-251672-1	OC_SP220B_EFF_100419	Total/NA	Water	8270C SIM	573122
MB 440-573122/1-A	Method Blank	Total/NA	Water	8270C SIM	573122
LCS 440-573122/3-A	Lab Control Sample	Total/NA	Water	8270C SIM	573122
LCSD 440-573122/4-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM	573122

# Definitions/Glossary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
SDG: Omega Chemical

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
%	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Accreditation/Certification Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-251672-1  
SDG: Omega Chemical

## Laboratory: Eurofins TestAmerica, Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State Program	CA ELAP 2706	06-30-20
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8270C SIM	3520C	Water	1,4-Dioxane



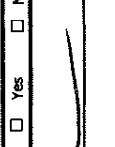
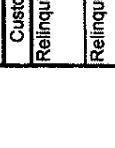
**TestAmerica Irvine**

17461 Derian Ave  
Suite 100  
Irvine, CA 92614  
phone 949.261.1022 fax

**Chain of Custody Record****TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

		Regulatory Program: <input type="checkbox"/> DW <input type="checkbox"/> NPDPS <input type="checkbox"/> RQA <input type="checkbox"/> Other.		Site Contact: Khalid Azhar Date: 10/4/2019	
Client Contact		Project Manager: Trent Henderson Tel/Fax: (949) 453-1047		Lab Contact: Danielle Roberts Carrier:	
De Maximis - Jaime Dinello		Analysis Turnaround Time			
1322 Scott St., Suite 104		<input type="checkbox"/> WORKING DAYS			
San Diego, CA 92106		<input type="checkbox"/> CALENDAR DAYS			
(662) 756-8149		<input type="checkbox"/> TAT if different from Below _____ STD _____			
Project Name: Omega Chemical - GWCS Monthly		<input type="checkbox"/> 2 weeks	<input type="checkbox"/> 1 week		
Site: Omega Chemical		<input type="checkbox"/> 2 days	<input type="checkbox"/> 1 day		
PO #:		<input type="checkbox"/> Unknown	<input type="checkbox"/> EPA 8270C - 1,4-Dioxane		
Sample Identification		Sample Date	Sample Time	Sample Type (e.g. comb. Grab)	Matrix
OC_SP220B_EFF_100419		10/4/2019 0845	Grab	G/W	5
OC_SP210_INF_100419		10/4/2019 0855	Grab	G/W	3
OC_TB_100419		10/4/2019 0830	H2O	H2O	2
Preferred Sample (Y/N) <input type="checkbox"/> Perform MS / MSD (Y/N) <input type="checkbox"/> EPA 8260B - VOCs + Fugans					
Sample Specific Notes:					
 440-251672 Chain of Custody					
<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months					
<b>Preservation Used:</b> 1=Ice; 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other _____					
<b>Possible Hazard Identification:</b> Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown					
<b>Special Instructions/QC Requirements &amp; Comments:</b>					
Custody Seals intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:	Date/Time: 10/4/19 10:47 Received by:  Company: TA-MARCO'S CO	Cooler Temp. (°C): Obs'd.: <input type="checkbox"/> Company: TA-ENR	Cond.: <input type="checkbox"/> Therm ID No.: <input type="checkbox"/> Date/Time: 10-4-9:45
Relinquished by: 		Company:	Date/Time:	Received by:  Company: TA-ENR	Date/Time:
Relinquished by: 		Company: TA-ENR	Date/Time: 10-4-1600	Received in Laboratory by:  Company: TA-ENR	Date/Time: 10/4/19 1600

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## Login Sample Receipt Checklist

Client: Jacob & Hefner Associates P.C. Job Number: 440-251672-1  
SDG Number: Omega Chemical

**Login Number: 251672**

**List Source: Eurofins TestAmerica, Irvine**

**List Number: 1**

**Creator: Soderblom, Tim**

Question	Answer	Comment	
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True		
The cooler's custody seal, if present, is intact.	N/A	Not present	
Sample custody seals, if present, are intact.	N/A	Not Present	
The cooler or samples do not appear to have been compromised or tampered with.	True		
Samples were received on ice.	True		
Cooler Temperature is acceptable.	True		
Cooler Temperature is recorded.	True		
COC is present.	True		
COC is filled out in ink and legible.	True		
COC is filled out with all pertinent information.	True		
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.	
There are no discrepancies between the containers received and the COC.	True		
Samples are received within Holding Time (excluding tests with immediate HTs)	True		
Sample containers have legible labels.	True		
Containers are not broken or leaking.	True		
Sample collection date/times are provided.	True		
Appropriate sample containers are used.	True		
Sample bottles are completely filled.	True		
Sample Preservation Verified.	N/A		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True		
Multiphasic samples are not present.	True		
Samples do not require splitting or compositing.	True		
Residual Chlorine Checked.	N/A		



## ANALYTICAL REPORT

Eurofins TestAmerica, Irvine  
17461 Derian Ave  
Suite 100  
Irvine, CA 92614-5817  
Tel: (949)261-1022

Laboratory Job ID: 440-254042-1

Client Project/Site: Omega Chemical - ISCO/Composite & Grab

For:  
Jacob & Hefner Associates P.C.  
15375 Barranca Parkway, J-101  
Irvine, California 92618

Attn: Trent Henderson



Authorized for release by:  
11/13/2019 2:52:07 PM  
Urvashi Patel, Manager of Project Management  
(949)260-3269  
[urvashi.patel@testamericainc.com](mailto:urvashi.patel@testamericainc.com)

Designee for  
Danielle Roberts, Senior Project Manager  
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### LINKS

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The  
Expert

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[www.testamericainc.com](http://www.testamericainc.com)

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## Sample Summary

Client: Jacob & Hefner Associates P.C.

Project/Site: Omega Chemical - ISCO/Composite & Grab

Job ID: 440-254042-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-254042-1	OC_SP220B_EFF_110519	Water	11/05/19 08:35	11/07/19 15:30	
440-254042-2	OC_SP210_INF_110519	Water	11/05/19 08:40	11/07/19 15:30	
440-254042-3	OC_TB_110519	Water	11/05/19 08:00	11/07/19 15:30	

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# Case Narrative

Client: Jacob & Hefner Associates P.C.

Project/Site: Omega Chemical - ISCO/Composite & Grab

Job ID: 440-254042-1

## Job ID: 440-254042-1

### Laboratory: Eurofins TestAmerica, Irvine

#### Narrative

#### Job Narrative 440-254042-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 11/7/2019 3:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

#### GC/MS VOA

Method 8260B: The continuing calibration verification (CCV) associated with batch 440-578996 recovered above the upper control limit for Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: OC\_SP220B\_EFF\_110519 (440-254042-1), OC\_SP210\_INF\_110519 (440-254042-2), OC\_TB\_110519 (440-254042-3) and (CCVIS 440-578996/2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Organic Prep

Method 3520C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 8270C preparation batch 440-579058. LCS was performed in duplicate to provide precision of data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

## Detection Summary

Client: Jacob &amp; Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite &amp; Grab

**Client Sample ID: OC\_SP220B\_EFF\_110519****Lab Sample ID: 440-254042-1**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Acetone	29		10	ug/L	1		8260B	Total/NA
1,4-Dioxane	18		0.49	ug/L	1		8270C SIM	Total/NA

**Client Sample ID: OC\_SP210\_INF\_110519****Lab Sample ID: 440-254042-2**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	40		1.0	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	2.6		1.0	ug/L	1		8260B	Total/NA
Chloroform	14		1.0	ug/L	1		8260B	Total/NA
Trichloroethene	30		1.0	ug/L	1		8260B	Total/NA
Trichlorofluoromethane	21		1.0	ug/L	1		8260B	Total/NA
1,1,2-Trichloro-1,2,2-trifluoroethane - DL	100		50	ug/L	10		8260B	Total/NA
Tetrachloroethylene - DL	250		10	ug/L	10		8260B	Total/NA

**Client Sample ID: OC\_TB\_110519****Lab Sample ID: 440-254042-3**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.

Project/Site: Omega Chemical - ISCO/Composite & Grab

Job ID: 440-254042-1

**Client Sample ID: OC\_SP220B\_EFF\_110519**

**Lab Sample ID: 440-254042-1**

**Matrix: Water**

Date Collected: 11/05/19 08:35

Date Received: 11/07/19 15:30

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L		11/08/19 15:33		1
1,1,1-Trichloroethane	ND		1.0	ug/L		11/08/19 15:33		1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L		11/08/19 15:33		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	ug/L		11/08/19 15:33		1
1,1,2-Trichloroethane	ND		1.0	ug/L		11/08/19 15:33		1
1,1-Dichloroethane	ND		1.0	ug/L		11/08/19 15:33		1
1,1-Dichloroethene	ND		1.0	ug/L		11/08/19 15:33		1
1,1-Dichloropropene	ND		1.0	ug/L		11/08/19 15:33		1
1,2,3-Trichlorobenzene	ND		1.0	ug/L		11/08/19 15:33		1
1,2,3-Trichloropropane	ND		1.0	ug/L		11/08/19 15:33		1
1,2,4-Trichlorobenzene	ND		1.0	ug/L		11/08/19 15:33		1
1,2,4-Trimethylbenzene	ND		1.0	ug/L		11/08/19 15:33		1
1,2-Dibromo-3-Chloropropane	ND		5.0	ug/L		11/08/19 15:33		1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L		11/08/19 15:33		1
1,2-Dichlorobenzene	ND		1.0	ug/L		11/08/19 15:33		1
1,2-Dichloroethane	ND		1.0	ug/L		11/08/19 15:33		1
1,2-Dichloropropene	ND		1.0	ug/L		11/08/19 15:33		1
1,3,5-Trimethylbenzene	ND		1.0	ug/L		11/08/19 15:33		1
1,3-Dichlorobenzene	ND		1.0	ug/L		11/08/19 15:33		1
1,3-Dichloropropane	ND		1.0	ug/L		11/08/19 15:33		1
1,4-Dichlorobenzene	ND		1.0	ug/L		11/08/19 15:33		1
2,2-Dichloropropane	ND		1.0	ug/L		11/08/19 15:33		1
2-Chlorotoluene	ND		1.0	ug/L		11/08/19 15:33		1
4-Chlorotoluene	ND		1.0	ug/L		11/08/19 15:33		1
<b>Acetone</b>	<b>29</b>		10	ug/L		11/08/19 15:33		1
Benzene	ND		0.50	ug/L		11/08/19 15:33		1
Bromobenzene	ND		1.0	ug/L		11/08/19 15:33		1
Bromochloromethane	ND		1.0	ug/L		11/08/19 15:33		1
Bromodichloromethane	ND		1.0	ug/L		11/08/19 15:33		1
Bromoform	ND		1.0	ug/L		11/08/19 15:33		1
Bromomethane	ND		1.0	ug/L		11/08/19 15:33		1
Carbon tetrachloride	ND		0.50	ug/L		11/08/19 15:33		1
Chlorobenzene	ND		1.0	ug/L		11/08/19 15:33		1
Chloroethane	ND		1.0	ug/L		11/08/19 15:33		1
Chloroform	ND		1.0	ug/L		11/08/19 15:33		1
Chloromethane	ND		1.0	ug/L		11/08/19 15:33		1
cis-1,2-Dichloroethene	ND		1.0	ug/L		11/08/19 15:33		1
cis-1,3-Dichloropropene	ND		0.50	ug/L		11/08/19 15:33		1
Dibromochloromethane	ND		1.0	ug/L		11/08/19 15:33		1
Dibromomethane	ND		1.0	ug/L		11/08/19 15:33		1
Dichlorodifluoromethane	ND		1.0	ug/L		11/08/19 15:33		1
Ethylbenzene	ND		1.0	ug/L		11/08/19 15:33		1
Hexachlorobutadiene	ND		1.0	ug/L		11/08/19 15:33		1
Isopropylbenzene	ND		1.0	ug/L		11/08/19 15:33		1
m,p-Xylene	ND		1.0	ug/L		11/08/19 15:33		1
Methylene Chloride	ND		5.0	ug/L		11/08/19 15:33		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	ug/L		11/08/19 15:33		1
Naphthalene	ND		1.0	ug/L		11/08/19 15:33		1
n-Butylbenzene	ND		1.0	ug/L		11/08/19 15:33		1

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

**Client Sample ID: OC\_SP220B\_EFF\_110519**

**Lab Sample ID: 440-254042-1**

Matrix: Water

Date Collected: 11/05/19 08:35

Date Received: 11/07/19 15:30

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		1.0	ug/L			11/08/19 15:33	1
o-Xylene	ND		1.0	ug/L			11/08/19 15:33	1
p-Isopropyltoluene	ND		1.0	ug/L			11/08/19 15:33	1
sec-Butylbenzene	ND		1.0	ug/L			11/08/19 15:33	1
Styrene	ND		1.0	ug/L			11/08/19 15:33	1
tert-Butylbenzene	ND		1.0	ug/L			11/08/19 15:33	1
Tetrachloroethene	ND		1.0	ug/L			11/08/19 15:33	1
Toluene	ND		1.0	ug/L			11/08/19 15:33	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			11/08/19 15:33	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			11/08/19 15:33	1
Trichloroethene	ND		1.0	ug/L			11/08/19 15:33	1
Trichlorofluoromethane	ND		1.0	ug/L			11/08/19 15:33	1
Vinyl chloride	ND		0.50	ug/L			11/08/19 15:33	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	101		70 - 130				11/08/19 15:33	1
4-Bromofluorobenzene (Surr)	103		80 - 120				11/08/19 15:33	1
Dibromofluoromethane (Surr)	104		76 - 132				11/08/19 15:33	1
Toluene-d8 (Surr)	103		80 - 128				11/08/19 15:33	1

## Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropyl alcohol	ND		250	ug/L			11/12/19 03:39	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	113		70 - 130				11/12/19 03:39	1
4-Bromofluorobenzene (Surr)	100		80 - 120				11/12/19 03:39	1
Dibromofluoromethane (Surr)	98		76 - 132				11/12/19 03:39	1
Toluene-d8 (Surr)	99		80 - 128				11/12/19 03:39	1

## Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	18		0.49	ug/L		11/08/19 10:07	11/09/19 10:30	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,4-Dioxane-d8 (Surr)	67		27 - 120			11/08/19 10:07	11/09/19 10:30	1

**Client Sample ID: OC\_SP210\_INF\_110519**

**Lab Sample ID: 440-254042-2**

Matrix: Water

Date Collected: 11/05/19 08:40

Date Received: 11/07/19 15:30

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L			11/08/19 16:03	1
1,1,1-Trichloroethane	ND		1.0	ug/L			11/08/19 16:03	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			11/08/19 16:03	1
1,1,2-Trichloroethane	ND		1.0	ug/L			11/08/19 16:03	1
1,1-Dichloroethane	ND		1.0	ug/L			11/08/19 16:03	1
<b>1,1-Dichloroethene</b>	<b>40</b>		1.0	ug/L			11/08/19 16:03	1
1,1-Dichloropropene	ND		1.0	ug/L			11/08/19 16:03	1
1,2,3-Trichlorobenzene	ND		1.0	ug/L			11/08/19 16:03	1

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.

Project/Site: Omega Chemical - ISCO/Composite & Grab

Job ID: 440-254042-1

**Client Sample ID: OC\_SP210\_INF\_110519**

**Lab Sample ID: 440-254042-2**

**Matrix: Water**

Date Collected: 11/05/19 08:40

Date Received: 11/07/19 15:30

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	ug/L		11/08/19 16:03		1
1,2,4-Trichlorobenzene	ND		1.0	ug/L		11/08/19 16:03		1
1,2,4-Trimethylbenzene	ND		1.0	ug/L		11/08/19 16:03		1
1,2-Dibromo-3-Chloropropane	ND		5.0	ug/L		11/08/19 16:03		1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L		11/08/19 16:03		1
1,2-Dichlorobenzene	ND		1.0	ug/L		11/08/19 16:03		1
<b>1,2-Dichloroethane</b>	<b>2.6</b>		1.0	ug/L		11/08/19 16:03		1
1,2-Dichloropropane	ND		1.0	ug/L		11/08/19 16:03		1
1,3,5-Trimethylbenzene	ND		1.0	ug/L		11/08/19 16:03		1
1,3-Dichlorobenzene	ND		1.0	ug/L		11/08/19 16:03		1
1,3-Dichloropropane	ND		1.0	ug/L		11/08/19 16:03		1
1,4-Dichlorobenzene	ND		1.0	ug/L		11/08/19 16:03		1
2,2-Dichloropropane	ND		1.0	ug/L		11/08/19 16:03		1
2-Chlorotoluene	ND		1.0	ug/L		11/08/19 16:03		1
4-Chlorotoluene	ND		1.0	ug/L		11/08/19 16:03		1
Acetone	ND		10	ug/L		11/08/19 16:03		1
Benzene	ND		0.50	ug/L		11/08/19 16:03		1
Bromobenzene	ND		1.0	ug/L		11/08/19 16:03		1
Bromochloromethane	ND		1.0	ug/L		11/08/19 16:03		1
Bromodichloromethane	ND		1.0	ug/L		11/08/19 16:03		1
Bromoform	ND		1.0	ug/L		11/08/19 16:03		1
Bromomethane	ND		1.0	ug/L		11/08/19 16:03		1
Carbon tetrachloride	ND		0.50	ug/L		11/08/19 16:03		1
Chlorobenzene	ND		1.0	ug/L		11/08/19 16:03		1
Chloroethane	ND		1.0	ug/L		11/08/19 16:03		1
<b>Chloroform</b>	<b>14</b>		1.0	ug/L		11/08/19 16:03		1
Chloromethane	ND		1.0	ug/L		11/08/19 16:03		1
cis-1,2-Dichloroethene	ND		1.0	ug/L		11/08/19 16:03		1
cis-1,3-Dichloropropene	ND		0.50	ug/L		11/08/19 16:03		1
Dibromochloromethane	ND		1.0	ug/L		11/08/19 16:03		1
Dibromomethane	ND		1.0	ug/L		11/08/19 16:03		1
Dichlorodifluoromethane	ND		1.0	ug/L		11/08/19 16:03		1
Ethylbenzene	ND		1.0	ug/L		11/08/19 16:03		1
Hexachlorobutadiene	ND		1.0	ug/L		11/08/19 16:03		1
Isopropylbenzene	ND		1.0	ug/L		11/08/19 16:03		1
m,p-Xylene	ND		1.0	ug/L		11/08/19 16:03		1
Methylene Chloride	ND		5.0	ug/L		11/08/19 16:03		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	ug/L		11/08/19 16:03		1
Naphthalene	ND		1.0	ug/L		11/08/19 16:03		1
n-Butylbenzene	ND		1.0	ug/L		11/08/19 16:03		1
N-Propylbenzene	ND		1.0	ug/L		11/08/19 16:03		1
o-Xylene	ND		1.0	ug/L		11/08/19 16:03		1
p-Isopropyltoluene	ND		1.0	ug/L		11/08/19 16:03		1
sec-Butylbenzene	ND		1.0	ug/L		11/08/19 16:03		1
Styrene	ND		1.0	ug/L		11/08/19 16:03		1
tert-Butylbenzene	ND		1.0	ug/L		11/08/19 16:03		1
Toluene	ND		1.0	ug/L		11/08/19 16:03		1
trans-1,2-Dichloroethene	ND		1.0	ug/L		11/08/19 16:03		1
trans-1,3-Dichloropropene	ND		0.50	ug/L		11/08/19 16:03		1

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

**Client Sample ID: OC\_SP210\_INF\_110519**

**Lab Sample ID: 440-254042-2**

Matrix: Water

Date Collected: 11/05/19 08:40

Date Received: 11/07/19 15:30

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	30		1.0	ug/L			11/08/19 16:03	1
Trichlorofluoromethane	21		1.0	ug/L			11/08/19 16:03	1
Vinyl chloride	ND		0.50	ug/L			11/08/19 16:03	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	106		70 - 130				11/08/19 16:03	1
4-Bromofluorobenzene (Surr)	103		80 - 120				11/08/19 16:03	1
Dibromofluoromethane (Surr)	103		76 - 132				11/08/19 16:03	1
Toluene-d8 (Surr)	104		80 - 128				11/08/19 16:03	1

## Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	100		50	ug/L			11/08/19 16:32	10
Tetrachloroethene	250		10	ug/L			11/08/19 16:32	10
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	107		70 - 130				11/08/19 16:32	10
4-Bromofluorobenzene (Surr)	99		80 - 120				11/08/19 16:32	10
Dibromofluoromethane (Surr)	104		76 - 132				11/08/19 16:32	10
Toluene-d8 (Surr)	103		80 - 128				11/08/19 16:32	10

## Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropyl alcohol	ND		250	ug/L			11/12/19 04:04	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	121		70 - 130				11/12/19 04:04	1
4-Bromofluorobenzene (Surr)	108		80 - 120				11/12/19 04:04	1
Dibromofluoromethane (Surr)	100		76 - 132				11/12/19 04:04	1
Toluene-d8 (Surr)	94		80 - 128				11/12/19 04:04	1

**Client Sample ID: OC\_TB\_110519**

**Lab Sample ID: 440-254042-3**

Matrix: Water

Date Collected: 11/05/19 08:00

Date Received: 11/07/19 15:30

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L			11/08/19 17:01	1
1,1,1-Trichloroethane	ND		1.0	ug/L			11/08/19 17:01	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			11/08/19 17:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	ug/L			11/08/19 17:01	1
1,1,2-Trichloroethane	ND		1.0	ug/L			11/08/19 17:01	1
1,1-Dichloroethane	ND		1.0	ug/L			11/08/19 17:01	1
1,1-Dichloroethene	ND		1.0	ug/L			11/08/19 17:01	1
1,1-Dichloropropene	ND		1.0	ug/L			11/08/19 17:01	1
1,2,3-Trichlorobenzene	ND		1.0	ug/L			11/08/19 17:01	1
1,2,3-Trichloropropane	ND		1.0	ug/L			11/08/19 17:01	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			11/08/19 17:01	1
1,2,4-Trimethylbenzene	ND		1.0	ug/L			11/08/19 17:01	1
1,2-Dibromo-3-Chloropropane	ND		5.0	ug/L			11/08/19 17:01	1

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.

Project/Site: Omega Chemical - ISCO/Composite & Grab

Job ID: 440-254042-1

**Client Sample ID: OC\_TB\_110519**

**Lab Sample ID: 440-254042-3**

**Matrix: Water**

Date Collected: 11/05/19 08:00

Date Received: 11/07/19 15:30

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		1.0	ug/L		11/08/19 17:01		1
1,2-Dichlorobenzene	ND		1.0	ug/L		11/08/19 17:01		1
1,2-Dichloroethane	ND		1.0	ug/L		11/08/19 17:01		1
1,2-Dichloropropane	ND		1.0	ug/L		11/08/19 17:01		1
1,3,5-Trimethylbenzene	ND		1.0	ug/L		11/08/19 17:01		1
1,3-Dichlorobenzene	ND		1.0	ug/L		11/08/19 17:01		1
1,3-Dichloropropane	ND		1.0	ug/L		11/08/19 17:01		1
1,4-Dichlorobenzene	ND		1.0	ug/L		11/08/19 17:01		1
2,2-Dichloropropane	ND		1.0	ug/L		11/08/19 17:01		1
2-Chlorotoluene	ND		1.0	ug/L		11/08/19 17:01		1
4-Chlorotoluene	ND		1.0	ug/L		11/08/19 17:01		1
Acetone	ND		10	ug/L		11/08/19 17:01		1
Benzene	ND		0.50	ug/L		11/08/19 17:01		1
Bromobenzene	ND		1.0	ug/L		11/08/19 17:01		1
Bromochloromethane	ND		1.0	ug/L		11/08/19 17:01		1
Bromodichloromethane	ND		1.0	ug/L		11/08/19 17:01		1
Bromoform	ND		1.0	ug/L		11/08/19 17:01		1
Bromomethane	ND		1.0	ug/L		11/08/19 17:01		1
Carbon tetrachloride	ND		0.50	ug/L		11/08/19 17:01		1
Chlorobenzene	ND		1.0	ug/L		11/08/19 17:01		1
Chloroethane	ND		1.0	ug/L		11/08/19 17:01		1
Chloroform	ND		1.0	ug/L		11/08/19 17:01		1
Chloromethane	ND		1.0	ug/L		11/08/19 17:01		1
cis-1,2-Dichloroethene	ND		1.0	ug/L		11/08/19 17:01		1
cis-1,3-Dichloropropene	ND		0.50	ug/L		11/08/19 17:01		1
Dibromochloromethane	ND		1.0	ug/L		11/08/19 17:01		1
Dibromomethane	ND		1.0	ug/L		11/08/19 17:01		1
Dichlorodifluoromethane	ND		1.0	ug/L		11/08/19 17:01		1
Ethylbenzene	ND		1.0	ug/L		11/08/19 17:01		1
Hexachlorobutadiene	ND		1.0	ug/L		11/08/19 17:01		1
Isopropylbenzene	ND		1.0	ug/L		11/08/19 17:01		1
m,p-Xylene	ND		1.0	ug/L		11/08/19 17:01		1
Methylene Chloride	ND		5.0	ug/L		11/08/19 17:01		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	ug/L		11/08/19 17:01		1
Naphthalene	ND		1.0	ug/L		11/08/19 17:01		1
n-Butylbenzene	ND		1.0	ug/L		11/08/19 17:01		1
N-Propylbenzene	ND		1.0	ug/L		11/08/19 17:01		1
o-Xylene	ND		1.0	ug/L		11/08/19 17:01		1
p-Isopropyltoluene	ND		1.0	ug/L		11/08/19 17:01		1
sec-Butylbenzene	ND		1.0	ug/L		11/08/19 17:01		1
Styrene	ND		1.0	ug/L		11/08/19 17:01		1
tert-Butylbenzene	ND		1.0	ug/L		11/08/19 17:01		1
Tetrachloroethene	ND		1.0	ug/L		11/08/19 17:01		1
Toluene	ND		1.0	ug/L		11/08/19 17:01		1
trans-1,2-Dichloroethene	ND		1.0	ug/L		11/08/19 17:01		1
trans-1,3-Dichloropropene	ND		0.50	ug/L		11/08/19 17:01		1
Trichloroethene	ND		1.0	ug/L		11/08/19 17:01		1
Trichlorofluoromethane	ND		1.0	ug/L		11/08/19 17:01		1
Vinyl chloride	ND		0.50	ug/L		11/08/19 17:01		1

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

**Client Sample ID: OC\_TB\_110519**

**Lab Sample ID: 440-254042-3**

Matrix: Water

Date Collected: 11/05/19 08:00

Date Received: 11/07/19 15:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 130		11/08/19 17:01	1
4-Bromofluorobenzene (Surr)	103		80 - 120		11/08/19 17:01	1
Dibromofluoromethane (Surr)	106		76 - 132		11/08/19 17:01	1
Toluene-d8 (Surr)	105		80 - 128		11/08/19 17:01	1

## Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropyl alcohol	ND		250	ug/L			11/12/19 04:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		70 - 130				11/12/19 04:30	1
4-Bromofluorobenzene (Surr)	102		80 - 120				11/12/19 04:30	1
Dibromofluoromethane (Surr)	98		76 - 132				11/12/19 04:30	1
Toluene-d8 (Surr)	102		80 - 128				11/12/19 04:30	1

# Surrogate Summary

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (70-130)	BFB (80-120)	DBFM (76-132)	TOL (80-128)
440-254042-1	OC_SP220B_EFF_110519	101	103	104	103
440-254042-1 - RA	OC_SP220B_EFF_110519	113	100	98	99
440-254042-2	OC_SP210_INF_110519	106	103	103	104
440-254042-2 - DL	OC_SP210_INF_110519	107	99	104	103
440-254042-2 - RA	OC_SP210_INF_110519	121	108	100	94
440-254042-3	OC_TB_110519	104	103	106	105
440-254042-3 - RA	OC_TB_110519	117	102	98	102
440-254076-A-1 MS	Matrix Spike	106	103	104	99
440-254076-A-1 MSD	Matrix Spike Duplicate	111	102	106	99
550-132885-A-1 MS	Matrix Spike	113	102	99	102
550-132885-A-1 MSD	Matrix Spike Duplicate	111	100	94	95
LCS 440-578996/1002	Lab Control Sample	100	102	104	98
LCS 440-579503/1003	Lab Control Sample	116	101	98	99
MB 440-578996/4	Method Blank	104	101	106	104
MB 440-579503/4	Method Blank	109	104	96	99

### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromoform (Surr)

TOL = Toluene-d8 (Surr)

## Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DXE (27-120)			
440-254042-1	OC_SP220B_EFF_110519	67			
LCS 440-579058/2-A	Lab Control Sample	64			
LCSD 440-579058/3-A	Lab Control Sample Dup	74			
MB 440-579058/1-A	Method Blank	72			

### Surrogate Legend

DXE = 1,4-Dioxane-d8 (Surr)

## Method Summary

Client: Jacob & Hefner Associates P.C.

Project/Site: Omega Chemical - ISCO/Composite & Grab

Job ID: 440-254042-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	TAL IRV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV

### Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# Lab Chronicle

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

**Client Sample ID: OC\_SP220B\_EFF\_110519**

**Lab Sample ID: 440-254042-1**

Matrix: Water

Date Collected: 11/05/19 08:35

Date Received: 11/07/19 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	RA	1	10 mL	10 mL	579503	11/12/19 03:39	WC	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	578996	11/08/19 15:33	AYL	TAL IRV
Total/NA	Prep	3520C			1015 mL	1.0 mL	579058	11/08/19 10:07	NAM	TAL IRV
Total/NA	Analysis	8270C SIM		1			579259	11/09/19 10:30	YCL	TAL IRV

**Client Sample ID: OC\_SP210\_INF\_110519**

**Lab Sample ID: 440-254042-2**

Matrix: Water

Date Collected: 11/05/19 08:40

Date Received: 11/07/19 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	RA	1	10 mL	10 mL	579503	11/12/19 04:04	WC	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	578996	11/08/19 16:03	AYL	TAL IRV
Total/NA	Analysis	8260B	DL	10	10 mL	10 mL	578996	11/08/19 16:32	AYL	TAL IRV

**Client Sample ID: OC\_TB\_110519**

**Lab Sample ID: 440-254042-3**

Matrix: Water

Date Collected: 11/05/19 08:00

Date Received: 11/07/19 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	RA	1	10 mL	10 mL	579503	11/12/19 04:30	WC	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	578996	11/08/19 17:01	AYL	TAL IRV

## Laboratory References:

TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# QC Sample Results

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-578996/4**

**Matrix: Water**

**Analysis Batch: 578996**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L		11/08/19 08:43		1
1,1,1-Trichloroethane	ND		1.0	ug/L		11/08/19 08:43		1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L		11/08/19 08:43		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	ug/L		11/08/19 08:43		1
1,1,2-Trichloroethane	ND		1.0	ug/L		11/08/19 08:43		1
1,1-Dichloroethane	ND		1.0	ug/L		11/08/19 08:43		1
1,1-Dichloroethene	ND		1.0	ug/L		11/08/19 08:43		1
1,1-Dichloropropene	ND		1.0	ug/L		11/08/19 08:43		1
1,2,3-Trichlorobenzene	ND		1.0	ug/L		11/08/19 08:43		1
1,2,3-Trichloropropane	ND		1.0	ug/L		11/08/19 08:43		1
1,2,4-Trichlorobenzene	ND		1.0	ug/L		11/08/19 08:43		1
1,2,4-Trimethylbenzene	ND		1.0	ug/L		11/08/19 08:43		1
1,2-Dibromo-3-Chloropropane	ND		5.0	ug/L		11/08/19 08:43		1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L		11/08/19 08:43		1
1,2-Dichlorobenzene	ND		1.0	ug/L		11/08/19 08:43		1
1,2-Dichloroethane	ND		1.0	ug/L		11/08/19 08:43		1
1,2-Dichloropropene	ND		1.0	ug/L		11/08/19 08:43		1
1,3,5-Trimethylbenzene	ND		1.0	ug/L		11/08/19 08:43		1
1,3-Dichlorobenzene	ND		1.0	ug/L		11/08/19 08:43		1
1,3-Dichloropropane	ND		1.0	ug/L		11/08/19 08:43		1
1,4-Dichlorobenzene	ND		1.0	ug/L		11/08/19 08:43		1
2,2-Dichloropropane	ND		1.0	ug/L		11/08/19 08:43		1
2-Chlorotoluene	ND		1.0	ug/L		11/08/19 08:43		1
4-Chlorotoluene	ND		1.0	ug/L		11/08/19 08:43		1
Acetone	ND		10	ug/L		11/08/19 08:43		1
Benzene	ND		0.50	ug/L		11/08/19 08:43		1
Bromobenzene	ND		1.0	ug/L		11/08/19 08:43		1
Bromochloromethane	ND		1.0	ug/L		11/08/19 08:43		1
Bromodichloromethane	ND		1.0	ug/L		11/08/19 08:43		1
Bromoform	ND		1.0	ug/L		11/08/19 08:43		1
Bromomethane	ND		1.0	ug/L		11/08/19 08:43		1
Carbon tetrachloride	ND		0.50	ug/L		11/08/19 08:43		1
Chlorobenzene	ND		1.0	ug/L		11/08/19 08:43		1
Chloroethane	ND		1.0	ug/L		11/08/19 08:43		1
Chloroform	ND		1.0	ug/L		11/08/19 08:43		1
Chloromethane	ND		1.0	ug/L		11/08/19 08:43		1
cis-1,2-Dichloroethene	ND		1.0	ug/L		11/08/19 08:43		1
cis-1,3-Dichloropropene	ND		0.50	ug/L		11/08/19 08:43		1
Dibromochloromethane	ND		1.0	ug/L		11/08/19 08:43		1
Dibromomethane	ND		1.0	ug/L		11/08/19 08:43		1
Dichlorodifluoromethane	ND		1.0	ug/L		11/08/19 08:43		1
Ethylbenzene	ND		1.0	ug/L		11/08/19 08:43		1
Hexachlorobutadiene	ND		1.0	ug/L		11/08/19 08:43		1
Isopropylbenzene	ND		1.0	ug/L		11/08/19 08:43		1
m,p-Xylene	ND		1.0	ug/L		11/08/19 08:43		1
Methylene Chloride	ND		5.0	ug/L		11/08/19 08:43		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	ug/L		11/08/19 08:43		1
Naphthalene	ND		1.0	ug/L		11/08/19 08:43		1

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-578996/4**

**Matrix: Water**

**Analysis Batch: 578996**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	ND		1.0	ug/L		11/08/19 08:43		1
N-Propylbenzene	ND		1.0	ug/L		11/08/19 08:43		1
o-Xylene	ND		1.0	ug/L		11/08/19 08:43		1
p-Isopropyltoluene	ND		1.0	ug/L		11/08/19 08:43		1
sec-Butylbenzene	ND		1.0	ug/L		11/08/19 08:43		1
Styrene	ND		1.0	ug/L		11/08/19 08:43		1
tert-Butylbenzene	ND		1.0	ug/L		11/08/19 08:43		1
Tetrachloroethene	ND		1.0	ug/L		11/08/19 08:43		1
Toluene	ND		1.0	ug/L		11/08/19 08:43		1
trans-1,2-Dichloroethene	ND		1.0	ug/L		11/08/19 08:43		1
trans-1,3-Dichloropropene	ND		0.50	ug/L		11/08/19 08:43		1
Trichloroethene	ND		1.0	ug/L		11/08/19 08:43		1
Trichlorofluoromethane	ND		1.0	ug/L		11/08/19 08:43		1
Vinyl chloride	ND		0.50	ug/L		11/08/19 08:43		1
<hr/>								
Surrogate	MB %Recovery	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	104		70 - 130			11/08/19 08:43		1
4-Bromofluorobenzene (Surr)	101		80 - 120			11/08/19 08:43		1
Dibromofluoromethane (Surr)	106		76 - 132			11/08/19 08:43		1
Toluene-d8 (Surr)	104		80 - 128			11/08/19 08:43		1

**Lab Sample ID: LCS 440-578996/1002**

**Matrix: Water**

**Analysis Batch: 578996**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	25.0	27.0	ug/L		108	60 - 141	
1,1,1-Trichloroethane	25.0	28.4	ug/L		114	70 - 130	
1,1,2,2-Tetrachloroethane	25.0	28.2	ug/L		113	63 - 130	
1,1,2-Trichloroethane	25.0	27.3	ug/L		109	70 - 130	
1,1-Dichloroethane	25.0	28.7	ug/L		115	64 - 130	
1,1-Dichloroethene	25.0	28.8	ug/L		115	70 - 130	
1,1-Dichloropropene	25.0	29.5	ug/L		118	70 - 130	
1,2,3-Trichlorobenzene	25.0	26.8	ug/L		107	60 - 140	
1,2,3-Trichloropropane	25.0	27.2	ug/L		109	63 - 130	
1,2,4-Trichlorobenzene	25.0	28.3	ug/L		113	60 - 140	
1,2,4-Trimethylbenzene	25.0	27.9	ug/L		112	70 - 135	
1,2-Dibromo-3-Chloropropane	25.0	26.0	ug/L		104	52 - 140	
1,2-Dibromoethane (EDB)	25.0	27.8	ug/L		111	70 - 130	
1,2-Dichlorobenzene	25.0	27.3	ug/L		109	70 - 130	
1,2-Dichloroethane	25.0	27.3	ug/L		109	57 - 138	
1,2-Dichloropropane	25.0	29.0	ug/L		116	67 - 130	
1,3,5-Trimethylbenzene	25.0	27.9	ug/L		112	70 - 136	
1,3-Dichlorobenzene	25.0	27.1	ug/L		108	70 - 130	
1,3-Dichloropropane	25.0	27.5	ug/L		110	70 - 130	
1,4-Dichlorobenzene	25.0	25.8	ug/L		103	70 - 130	
2,2-Dichloropropane	25.0	31.0	ug/L		124	68 - 141	
2-Chlorotoluene	25.0	26.8	ug/L		107	70 - 130	

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-578996/1002**

**Matrix: Water**

**Analysis Batch: 578996**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
4-Chlorotoluene	25.0	27.7		ug/L	111	70 - 130	
Acetone	125	164		ug/L	131	10 - 150	
Benzene	25.0	27.2		ug/L	109	68 - 130	
Bromobenzene	25.0	27.3		ug/L	109	70 - 130	
Bromochloromethane	25.0	26.9		ug/L	107	70 - 130	
Bromodichloromethane	25.0	28.1		ug/L	112	70 - 132	
Bromoform	25.0	27.9		ug/L	112	60 - 148	
Bromomethane	25.0	29.2		ug/L	117	64 - 139	
Carbon tetrachloride	25.0	27.6		ug/L	110	60 - 150	
Chlorobenzene	25.0	27.3		ug/L	109	70 - 130	
Chloroethane	25.0	30.6		ug/L	122	64 - 135	
Chloroform	25.0	28.2		ug/L	113	70 - 130	
Chloromethane	25.0	29.7		ug/L	119	47 - 140	
cis-1,2-Dichloroethene	25.0	28.9		ug/L	116	70 - 133	
cis-1,3-Dichloropropene	25.0	29.1		ug/L	116	70 - 133	
Dibromochloromethane	25.0	28.2		ug/L	113	69 - 145	
Dibromomethane	25.0	28.8		ug/L	115	70 - 130	
Dichlorodifluoromethane	25.0	31.1		ug/L	124	29 - 150	
Ethylbenzene	25.0	27.4		ug/L	110	70 - 130	
Hexachlorobutadiene	25.0	26.2		ug/L	105	10 - 150	
Isopropylbenzene	25.0	27.9		ug/L	112	70 - 136	
m,p-Xylene	25.0	27.7		ug/L	111	70 - 130	
Methylene Chloride	25.0	23.2		ug/L	93	52 - 130	
Methyl-t-Butyl Ether (MTBE)	25.0	27.3		ug/L	109	63 - 131	
Naphthalene	25.0	26.0		ug/L	104	60 - 140	
n-Butylbenzene	25.0	28.1		ug/L	112	65 - 150	
N-Propylbenzene	25.0	28.5		ug/L	114	67 - 139	
o-Xylene	25.0	28.5		ug/L	114	70 - 130	
p-Isopropyltoluene	25.0	28.5		ug/L	114	70 - 132	
sec-Butylbenzene	25.0	27.4		ug/L	110	70 - 138	
Styrene	25.0	27.3		ug/L	109	70 - 134	
tert-Butylbenzene	25.0	27.2		ug/L	109	70 - 130	
Tetrachloroethene	25.0	27.6		ug/L	110	70 - 130	
Toluene	25.0	27.0		ug/L	108	70 - 130	
trans-1,2-Dichloroethene	25.0	29.0		ug/L	116	70 - 130	
trans-1,3-Dichloropropene	25.0	29.7		ug/L	119	70 - 132	
Trichloroethene	25.0	27.7		ug/L	111	70 - 130	
Trichlorofluoromethane	25.0	30.5		ug/L	122	60 - 150	
Vinyl chloride	25.0	30.6		ug/L	122	59 - 133	

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	104		76 - 132
Toluene-d8 (Surr)	98		80 - 128

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-254076-A-1 MS**

**Matrix: Water**

**Analysis Batch: 578996**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		10.0	10.1		ug/L		101	60 - 149
1,1,1-Trichloroethane	ND		10.0	11.0		ug/L		110	70 - 130
1,1,2,2-Tetrachloroethane	ND		10.0	11.8		ug/L		118	63 - 130
1,1,2-Trichloroethane	ND		10.0	10.5		ug/L		105	70 - 130
1,1-Dichloroethane	15		10.0	25.1		ug/L		99	65 - 130
1,1-Dichloroethene	220	E	10.0	220	E 4	ug/L		-40	70 - 130
1,1-Dichloropropene	ND		10.0	11.2		ug/L		112	64 - 130
1,2,3-Trichlorobenzene	ND		10.0	11.0		ug/L		110	60 - 140
1,2,3-Trichloropropane	ND		10.0	11.4		ug/L		114	60 - 130
1,2,4-Trichlorobenzene	ND		10.0	11.1		ug/L		111	60 - 140
1,2,4-Trimethylbenzene	ND		10.0	11.2		ug/L		112	70 - 130
1,2-Dibromo-3-Chloropropane	ND		10.0	11.1		ug/L		111	48 - 140
1,2-Dibromoethane (EDB)	ND		10.0	10.8		ug/L		108	70 - 131
1,2-Dichlorobenzene	ND		10.0	10.9		ug/L		109	70 - 130
1,2-Dichloroethane	1.5		10.0	12.3		ug/L		108	56 - 146
1,2-Dichloropropane	ND		10.0	11.5		ug/L		115	69 - 130
1,3,5-Trimethylbenzene	ND		10.0	10.8		ug/L		108	70 - 130
1,3-Dichlorobenzene	ND		10.0	10.7		ug/L		107	70 - 130
1,3-Dichloropropane	ND		10.0	10.8		ug/L		108	70 - 130
1,4-Dichlorobenzene	ND		10.0	10.4		ug/L		104	70 - 130
2,2-Dichloropropane	ND		10.0	11.2		ug/L		112	69 - 138
2-Chlorotoluene	ND		10.0	10.7		ug/L		107	70 - 130
4-Chlorotoluene	ND		10.0	10.8		ug/L		108	70 - 130
Acetone	ND	F1	50.0	75.4	F1	ug/L		151	10 - 150
Benzene	0.51		10.0	10.8		ug/L		103	66 - 130
Bromobenzene	ND		10.0	10.5		ug/L		105	70 - 130
Bromochloromethane	ND		10.0	10.6		ug/L		106	70 - 130
Bromodichloromethane	ND		10.0	11.3		ug/L		113	70 - 138
Bromoform	ND		10.0	10.6		ug/L		106	59 - 150
Bromomethane	ND		10.0	10.2		ug/L		102	62 - 131
Carbon tetrachloride	ND		10.0	10.7		ug/L		107	60 - 150
Chlorobenzene	ND		10.0	10.4		ug/L		104	70 - 130
Chloroethane	ND		10.0	10.5		ug/L		105	68 - 130
Chloroform	ND		10.0	11.3		ug/L		109	70 - 130
Chloromethane	ND		10.0	10.0		ug/L		100	39 - 144
cis-1,2-Dichloroethene	ND		10.0	11.3		ug/L		109	70 - 130
cis-1,3-Dichloropropene	ND		10.0	11.1		ug/L		111	70 - 133
Dibromochloromethane	ND		10.0	10.9		ug/L		109	70 - 148
Dibromomethane	ND		10.0	11.1		ug/L		111	70 - 130
Dichlorodifluoromethane	ND		10.0	10.3		ug/L		103	25 - 142
Ethylbenzene	ND		10.0	10.4		ug/L		104	70 - 130
Hexachlorobutadiene	ND		10.0	10.9		ug/L		109	10 - 150
Isopropylbenzene	ND		10.0	10.7		ug/L		107	70 - 132
m,p-Xylene	ND		10.0	10.3		ug/L		103	70 - 133
Methylene Chloride	ND		10.0	10.2		ug/L		102	52 - 130
Methyl-t-Butyl Ether (MTBE)	ND		10.0	10.1		ug/L		101	70 - 130
Naphthalene	ND		10.0	11.0		ug/L		110	60 - 140
n-Butylbenzene	ND		10.0	11.4		ug/L		114	61 - 149

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-254076-A-1 MS**

**Matrix: Water**

**Analysis Batch: 578996**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
N-Propylbenzene	ND		10.0	11.0		ug/L		110	66 - 135
o-Xylene	ND		10.0	10.2		ug/L		102	70 - 133
p-Isopropyltoluene	ND		10.0	11.1		ug/L		111	70 - 130
sec-Butylbenzene	ND		10.0	10.9		ug/L		109	67 - 134
Styrene	ND		10.0	10.0		ug/L		100	29 - 150
tert-Butylbenzene	ND		10.0	10.8		ug/L		108	70 - 130
Tetrachloroethene	ND		10.0	13.1		ug/L		125	70 - 137
Toluene	ND		10.0	10.5		ug/L		105	70 - 130
trans-1,2-Dichloroethene	ND		10.0	10.6		ug/L		106	70 - 130
trans-1,3-Dichloropropene	ND		10.0	11.2		ug/L		112	70 - 138
Trichloroethene	13		10.0	23.2		ug/L		98	70 - 130
Trichlorofluoromethane	ND		10.0	11.0		ug/L		110	60 - 150
Vinyl chloride	6.0		10.0	15.9		ug/L		99	50 - 137
<hr/>									
Surrogate	MS %Recovery	MS Qualifier	MS Limits						
1,2-Dichloroethane-d4 (Surr)	106		70 - 130						
4-Bromofluorobenzene (Surr)	103		80 - 120						
Dibromofluoromethane (Surr)	104		76 - 132						
Toluene-d8 (Surr)	99		80 - 128						

**Lab Sample ID: 440-254076-A-1 MSD**

**Matrix: Water**

**Analysis Batch: 578996**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1,2-Tetrachloroethane	ND		10.0	10.3		ug/L		103	60 - 149	1	20
1,1,1-Trichloroethane	ND		10.0	11.0		ug/L		110	70 - 130	0	20
1,1,2,2-Tetrachloroethane	ND		10.0	11.6		ug/L		116	63 - 130	2	30
1,1,2-Trichloroethane	ND		10.0	10.6		ug/L		106	70 - 130	2	25
1,1-Dichloroethane	15		10.0	25.3		ug/L		101	65 - 130	1	20
1,1-Dichloroethene	220	E	10.0	220	E 4	ug/L		-34	70 - 130	0	20
1,1-Dichloropropene	ND		10.0	11.0		ug/L		110	64 - 130	2	20
1,2,3-Trichlorobenzene	ND		10.0	11.4		ug/L		114	60 - 140	4	20
1,2,3-Trichloropropane	ND		10.0	11.4		ug/L		114	60 - 130	1	30
1,2,4-Trichlorobenzene	ND		10.0	11.3		ug/L		113	60 - 140	2	20
1,2,4-Trimethylbenzene	ND		10.0	11.0		ug/L		110	70 - 130	2	25
1,2-Dibromo-3-Chloropropane	ND		10.0	11.5		ug/L		115	48 - 140	4	30
1,2-Dibromoethane (EDB)	ND		10.0	11.4		ug/L		114	70 - 131	6	25
1,2-Dichlorobenzene	ND		10.0	11.0		ug/L		110	70 - 130	1	20
1,2-Dichloroethane	1.5		10.0	12.7		ug/L		111	56 - 146	3	20
1,2-Dichloropropene	ND		10.0	11.4		ug/L		114	69 - 130	1	20
1,3,5-Trimethylbenzene	ND		10.0	10.7		ug/L		107	70 - 130	1	20
1,3-Dichlorobenzene	ND		10.0	10.6		ug/L		106	70 - 130	1	20
1,3-Dichloropropane	ND		10.0	11.4		ug/L		114	70 - 130	5	25
1,4-Dichlorobenzene	ND		10.0	10.3		ug/L		103	70 - 130	1	20
2,2-Dichloropropane	ND		10.0	11.3		ug/L		113	69 - 138	1	25
2-Chlorotoluene	ND		10.0	10.4		ug/L		104	70 - 130	3	20
4-Chlorotoluene	ND		10.0	10.7		ug/L		107	70 - 130	1	20

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-254076-A-1 MSD**

**Matrix: Water**

**Analysis Batch: 578996**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	RPD Limit
Acetone	ND	F1	50.0	90.6	F1	ug/L	181	10 - 150	18	35
Benzene	0.51		10.0	11.0		ug/L	105	66 - 130	2	20
Bromobenzene	ND		10.0	10.6		ug/L	106	70 - 130	0	20
Bromoform	ND		10.0	11.1		ug/L	111	59 - 150	5	25
Bromomethane	ND		10.0	10.2		ug/L	102	62 - 131	0	25
Carbon tetrachloride	ND		10.0	10.6		ug/L	106	60 - 150	0	25
Chlorobenzene	ND		10.0	10.4		ug/L	104	70 - 130	0	20
Chloroethane	ND		10.0	11.0		ug/L	110	68 - 130	5	25
Chloroform	ND		10.0	11.3		ug/L	109	70 - 130	0	20
Chloromethane	ND		10.0	9.95		ug/L	100	39 - 144	1	25
cis-1,2-Dichloroethene	ND		10.0	11.0		ug/L	106	70 - 130	2	20
cis-1,3-Dichloropropene	ND		10.0	11.3		ug/L	113	70 - 133	2	20
Dibromochloromethane	ND		10.0	11.1		ug/L	111	70 - 148	3	25
Dibromomethane	ND		10.0	11.4		ug/L	114	70 - 130	3	25
Dichlorodifluoromethane	ND		10.0	10.4		ug/L	104	25 - 142	0	30
Ethylbenzene	ND		10.0	10.4		ug/L	104	70 - 130	0	20
Hexachlorobutadiene	ND		10.0	10.6		ug/L	106	10 - 150	4	20
Isopropylbenzene	ND		10.0	10.7		ug/L	107	70 - 132	0	20
m,p-Xylene	ND		10.0	10.4		ug/L	104	70 - 133	1	25
Methylene Chloride	ND		10.0	10.3		ug/L	103	52 - 130	1	20
Methyl-t-Butyl Ether (MTBE)	ND		10.0	11.3		ug/L	113	70 - 130	11	25
Naphthalene	ND		10.0	11.5		ug/L	115	60 - 140	5	30
n-Butylbenzene	ND		10.0	11.2		ug/L	112	61 - 149	2	20
N-Propylbenzene	ND		10.0	10.9		ug/L	109	66 - 135	1	20
o-Xylene	ND		10.0	10.5		ug/L	105	70 - 133	2	20
p-Isopropyltoluene	ND		10.0	10.9		ug/L	109	70 - 130	2	20
sec-Butylbenzene	ND		10.0	10.7		ug/L	107	67 - 134	1	20
Styrene	ND		10.0	10.3		ug/L	103	29 - 150	2	35
tert-Butylbenzene	ND		10.0	10.7		ug/L	107	70 - 130	1	20
Tetrachloroethene	ND		10.0	13.1		ug/L	124	70 - 137	0	20
Toluene	ND		10.0	10.5		ug/L	105	70 - 130	1	20
trans-1,2-Dichloroethene	ND		10.0	10.7		ug/L	107	70 - 130	0	20
trans-1,3-Dichloropropene	ND		10.0	11.4		ug/L	114	70 - 138	2	25
Trichloroethene	13		10.0	23.2		ug/L	98	70 - 130	0	20
Trichlorofluoromethane	ND		10.0	11.3		ug/L	113	60 - 150	3	25
Vinyl chloride	6.0		10.0	16.0		ug/L	100	50 - 137	1	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		70 - 130
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	106		76 - 132
Toluene-d8 (Surr)	99		80 - 128

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-579503/4**

**Matrix: Water**

**Analysis Batch: 579503**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropyl alcohol	ND		250	ug/L			11/11/19 20:01	1
<b>Surrogate</b>								
<b>1,2-Dichloroethane-d4 (Surr)</b>								
	109		70 - 130				11/11/19 20:01	1
<b>4-Bromofluorobenzene (Surr)</b>								
	104		80 - 120				11/11/19 20:01	1
<b>Dibromofluoromethane (Surr)</b>								
	96		76 - 132				11/11/19 20:01	1
<b>Toluene-d8 (Surr)</b>								
	99		80 - 128				11/11/19 20:01	1

**Lab Sample ID: LCS 440-579503/1003**

**Matrix: Water**

**Analysis Batch: 579503**

Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Isopropyl alcohol		250	242	J	ug/L		97	49 - 142
<b>Surrogate</b>								
<b>1,2-Dichloroethane-d4 (Surr)</b>								
	116		70 - 130					
<b>4-Bromofluorobenzene (Surr)</b>								
	101		80 - 120					
<b>Dibromofluoromethane (Surr)</b>								
	98		76 - 132					
<b>Toluene-d8 (Surr)</b>								
	99		80 - 128					

**Lab Sample ID: 550-132885-A-1 MS**

**Matrix: Water**

**Analysis Batch: 579503**

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	113		70 - 130
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	99		76 - 132
Toluene-d8 (Surr)	102		80 - 128

**Lab Sample ID: 550-132885-A-1 MSD**

**Matrix: Water**

**Analysis Batch: 579503**

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		70 - 130
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	94		76 - 132
Toluene-d8 (Surr)	95		80 - 128

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

# QC Sample Results

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

## Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

**Lab Sample ID: MB 440-579058/1-A**

**Matrix: Water**

**Analysis Batch: 579259**

Analyte	MB	MB	RL	Unit	D	Prepared		Analyzed	Dil Fac
	Result	Qualifier				ug/L	11/08/19 10:07		
1,4-Dioxane	ND		0.50						1
<b>Surrogate</b>	<b>MB</b>	<b>MB</b>							
	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
1,4-Dioxane-d8 (Surr)	72		27 - 120						

**Lab Sample ID: LCS 440-579058/2-A**

**Matrix: Water**

**Analysis Batch: 579259**

Analyte	Spike Added	LCSS	LCSS	Unit	D	%Rec	%Rec. Limits	
		Result	Qualifier					
1,4-Dioxane	2.00	1.28		ug/L		64	36 - 120	
<b>Surrogate</b>	<b>LCS</b>	<b>LCS</b>						
	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>					
1,4-Dioxane-d8 (Surr)	64		27 - 120					

**Lab Sample ID: LCSD 440-579058/3-A**

**Matrix: Water**

**Analysis Batch: 579259**

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec. Limits	RPD
		Result	Qualifier					
1,4-Dioxane	2.00	1.50		ug/L		75	36 - 120	16
<b>Surrogate</b>	<b>LCSD</b>	<b>LCSD</b>						
	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>					
1,4-Dioxane-d8 (Surr)	74		27 - 120					

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 579058**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 579058**

**%Rec.**

**Limits**

**Dil Fac**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 579058**

**%Rec.**

**RPD**

**Limit**

**RPD**

**Limit**

# QC Association Summary

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

## GC/MS VOA

### Analysis Batch: 578996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254042-1	OC_SP220B_EFF_110519	Total/NA	Water	8260B	
440-254042-2	OC_SP210_INF_110519	Total/NA	Water	8260B	
440-254042-2 - DL	OC_SP210_INF_110519	Total/NA	Water	8260B	
440-254042-3	OC_TB_110519	Total/NA	Water	8260B	
MB 440-578996/4	Method Blank	Total/NA	Water	8260B	
LCS 440-578996/1002	Lab Control Sample	Total/NA	Water	8260B	
440-254076-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-254076-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 579503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254042-1 - RA	OC_SP220B_EFF_110519	Total/NA	Water	8260B	
440-254042-2 - RA	OC_SP210_INF_110519	Total/NA	Water	8260B	
440-254042-3 - RA	OC_TB_110519	Total/NA	Water	8260B	
MB 440-579503/4	Method Blank	Total/NA	Water	8260B	
LCS 440-579503/1003	Lab Control Sample	Total/NA	Water	8260B	
550-132885-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
550-132885-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 579058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254042-1	OC_SP220B_EFF_110519	Total/NA	Water	3520C	
MB 440-579058/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-579058/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-579058/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 579259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254042-1	OC_SP220B_EFF_110519	Total/NA	Water	8270C SIM	579058
MB 440-579058/1-A	Method Blank	Total/NA	Water	8270C SIM	579058
LCS 440-579058/2-A	Lab Control Sample	Total/NA	Water	8270C SIM	579058
LCSD 440-579058/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM	579058

# Definitions/Glossary

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

### Abbreviation

**These commonly used abbreviations may or may not be present in this report.**

□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Accreditation/Certification Summary

Client: Jacob & Hefner Associates P.C.

Job ID: 440-254042-1

Project/Site: Omega Chemical - ISCO/Composite & Grab

## Laboratory: Eurofins TestAmerica, Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State Program	CA ELAP 2706	06-30-20
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8270C SIM	3520C	Water	1,4-Dioxane

Reaction time: 1 h; HCl: 25%; NaOH: 6%; Other:

### Possible Hazard Identification:

Non-Hazard       Flammable       Skin Irritant

Custody Seals Intact:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Custody Seal No.:	Company:	Date/Time:	Received by:	Cooler Temp. (°C):	Obsd.:	Corrd.:	Therm ID No.:
Relinquished by:	<u>J. A.</u>		54A		11/7/19	Blue Milk	5A 120	14	14	12-89
Relinquished by:				Company:	Date/Time	Received by:	Company:	Company:	Date/Time:	
Relinquished by:	<u>J. A.</u>		7A 120		11/7/19	Blue Milk	5A 120	14	14	12-89

## Login Sample Receipt Checklist

Client: Jacob & Hefner Associates P.C.

Job Number: 440-254042-1

**Login Number: 254042**

**List Source: Eurofins TestAmerica, Irvine**

**List Number: 1**

**Creator: Soderblom, Tim**

Question	Answer	Comment	
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True		1
The cooler's custody seal, if present, is intact.	N/A	Not present	2
Sample custody seals, if present, are intact.	N/A	Not Present	3
The cooler or samples do not appear to have been compromised or tampered with.	True		4
Samples were received on ice.	True		5
Cooler Temperature is acceptable.	True		6
Cooler Temperature is recorded.	True		7
COC is present.	True		8
COC is filled out in ink and legible.	True		9
COC is filled out with all pertinent information.	True		10
Is the Field Sampler's name present on COC?	True		11
There are no discrepancies between the containers received and the COC.	True		12
Samples are received within Holding Time (excluding tests with immediate HTs)	True		13
Sample containers have legible labels.	True		14
Containers are not broken or leaking.	True		15
Sample collection date/times are provided.	True		
Appropriate sample containers are used.	True		
Sample bottles are completely filled.	True		
Sample Preservation Verified.	N/A		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True		
Multiphasic samples are not present.	True		
Samples do not require splitting or compositing.	True		
Residual Chlorine Checked.	N/A		



## ANALYTICAL REPORT

Eurofins TestAmerica, Irvine  
17461 Derian Ave  
Suite 100  
Irvine, CA 92614-5817  
Tel: (949)261-1022

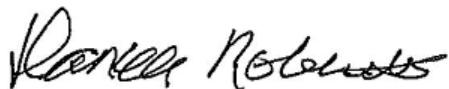
Laboratory Job ID: 440-254649-1

Laboratory Sample Delivery Group: Whittier, CA  
Client Project/Site: Omega Chemical Wastewater

**For:**

Jacob & Hefner Associates P.C.  
15375 Barranca Parkway, J-101  
Irvine, California 92618

Attn: Trent Henderson



Authorized for release by:  
11/28/2019 6:00:49 AM

Danielle Roberts, Senior Project Manager  
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LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## Sample Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-254649-1	COMPOSITE_20191115	Water	11/15/19 08:20	11/15/19 11:10	
440-254649-2	GRAB_20191115	Water	11/15/19 08:30	11/15/19 11:10	

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# Case Narrative

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Job ID: 440-254649-1

### Laboratory: Eurofins TestAmerica, Irvine

#### Narrative

#### Job Narrative 440-254649-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 11/15/2019 12:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

#### GC/MS VOA

Method 8260B: The matrix spike / matrix spike duplicate (MS/MSD) precision for analytical batch 440-580924 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC/MS Semi VOA

Method 8270C: The following compounds were outside control limits in the continuing calibration verification (CCV) associated with batch 440-581738: bis (2-chloroisopropyl) ether. These compounds are not classified as Calibration Check Compounds (CCCs) in the reference method, and the laboratory defaults to in-house and/or project-specific criteria for evaluation. A reporting limit standard was run in sequence to verify the instrument sensitivity for this analyte. The following sample(s) were non-detect for this analyte and thus were not adversely affected.

Method 8270C: The laboratory control sample (LCS) for preparation batch 440-581183 and analytical batch 440-581738 recovered outside control limits for the following analyte(s): Benzidine. Benzidine is known to be subject to oxidative losses during solvent concentration using this method; therefore, re-extraction and re-analysis were not performed. Benzidine is reported as possible low bias.

Method 8270C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-581183 and analytical batch 440-581738 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Field Service / Mobile Lab

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### General Chemistry

Method SM 4500 S2 D: The following samples were improperly preserved in the field: GRAB\_20191115 (440-254649-2), (440-254649-H-2-B MS) and (440-254649-H-2-C MSD). The sample was unpreserved, Sodium hydroxide was added to the sample to adjust the pH from 7 to >14.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Organic Prep

Method 3520C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 8270C preparation batch 440-580937. LCS was performed in duplicate to provide precision of data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

## Detection Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

### Client Sample ID: COMPOSITE\_20191115

### Lab Sample ID: 440-254649-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	1.9		1.0	mg/L	1		SM 2540D	Total/NA
Chemical Oxygen Demand	26		20	mg/L	1		SM 5220D	Total/NA

### Client Sample ID: GRAB\_20191115

### Lab Sample ID: 440-254649-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	17		0.49	ug/L	1		8270C SIM	Total/NA
pH	8.7	HF	0.1	SU	1		SM 4500 H+ B	Total/NA
Field pH	8.68			SU	1		Field Sampling	Total/NA
Field Temperature	17.40			Celsius	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Client Sample ID: COMPOSITE\_20191115

Date Collected: 11/15/19 08:20  
Date Received: 11/15/19 11:10

## Lab Sample ID: 440-254649-1

Matrix: Water

### General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.9		1.0	mg/L			11/15/19 17:14	1
Chemical Oxygen Demand	26		20	mg/L			11/20/19 10:19	1

## Client Sample ID: GRAB\_20191115

Date Collected: 11/15/19 08:30  
Date Received: 11/15/19 11:10

## Lab Sample ID: 440-254649-2

Matrix: Water

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L			11/19/19 21:39	1
1,1,1-Trichloroethane	ND		1.0	ug/L			11/19/19 21:39	1
2-Chloroethyl vinyl ether	ND		2.0	ug/L			11/19/19 10:34	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			11/19/19 21:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	ug/L			11/19/19 21:39	1
Acrolein	ND		5.0	ug/L			11/19/19 10:34	1
1,1,2-Trichloroethane	ND		1.0	ug/L			11/19/19 21:39	1
Acrylonitrile	ND		2.0	ug/L			11/19/19 10:34	1
1,1-Dichloroethane	ND		1.0	ug/L			11/19/19 21:39	1
1,1-Dichloroethene	ND		1.0	ug/L			11/19/19 21:39	1
1,1-Dichloropropene	ND		1.0	ug/L			11/19/19 21:39	1
Total Volatile Organic Compounds	ND		150	ug/L			11/19/19 10:34	1
1,2,3-Trichlorobenzene	ND		1.0	ug/L			11/19/19 21:39	1
1,2,3-Trichloropropane	ND		1.0	ug/L			11/19/19 21:39	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			11/19/19 21:39	1
1,2,4-Trimethylbenzene	ND		1.0	ug/L			11/19/19 21:39	1
1,2-Dibromo-3-Chloropropane	ND		5.0	ug/L			11/19/19 21:39	1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L			11/19/19 21:39	1
1,2-Dichlorobenzene	ND		1.0	ug/L			11/19/19 21:39	1
1,2-Dichloroethane	ND		1.0	ug/L			11/19/19 21:39	1
1,2-Dichloropropane	ND		1.0	ug/L			11/19/19 21:39	1
1,3,5-Trimethylbenzene	ND		1.0	ug/L			11/19/19 21:39	1
1,3-Dichlorobenzene	ND		1.0	ug/L			11/19/19 21:39	1
1,3-Dichloropropane	ND		1.0	ug/L			11/19/19 21:39	1
1,4-Dichlorobenzene	ND		1.0	ug/L			11/19/19 21:39	1
2,2-Dichloropropane	ND		1.0	ug/L			11/19/19 21:39	1
2-Chlorotoluene	ND		1.0	ug/L			11/19/19 21:39	1
4-Chlorotoluene	ND		1.0	ug/L			11/19/19 21:39	1
Acetone	ND		10	ug/L			11/19/19 21:39	1
Benzene	ND		0.50	ug/L			11/19/19 21:39	1
Bromobenzene	ND		1.0	ug/L			11/19/19 21:39	1
Bromochloromethane	ND		1.0	ug/L			11/19/19 21:39	1
Bromodichloromethane	ND		1.0	ug/L			11/19/19 21:39	1
Bromoform	ND		1.0	ug/L			11/19/19 21:39	1
Bromomethane	ND		1.0	ug/L			11/19/19 21:39	1
Carbon tetrachloride	ND		0.50	ug/L			11/19/19 21:39	1
Chlorobenzene	ND		1.0	ug/L			11/19/19 21:39	1
Chloroethane	ND		1.0	ug/L			11/19/19 21:39	1
Chloroform	ND		1.0	ug/L			11/19/19 21:39	1
Chloromethane	ND		1.0	ug/L			11/19/19 21:39	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			11/19/19 21:39	1

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# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

**Client Sample ID: GRAB\_20191115**

Date Collected: 11/15/19 08:30

Date Received: 11/15/19 11:10

**Lab Sample ID: 440-254649-2**

Matrix: Water

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.50	ug/L		11/19/19 21:39		1
Dibromochloromethane	ND		1.0	ug/L		11/19/19 21:39		1
Dibromomethane	ND		1.0	ug/L		11/19/19 21:39		1
Dichlorodifluoromethane	ND		1.0	ug/L		11/19/19 21:39		1
Ethylbenzene	ND		1.0	ug/L		11/19/19 21:39		1
Hexachlorobutadiene	ND		1.0	ug/L		11/19/19 21:39		1
Isopropyl alcohol	ND		250	ug/L		11/19/19 21:39		1
Isopropylbenzene	ND		1.0	ug/L		11/19/19 21:39		1
m,p-Xylene	ND		1.0	ug/L		11/19/19 21:39		1
Methylene Chloride	ND		5.0	ug/L		11/19/19 21:39		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	ug/L		11/19/19 21:39		1
Naphthalene	ND		1.0	ug/L		11/19/19 21:39		1
n-Butylbenzene	ND		1.0	ug/L		11/19/19 21:39		1
N-Propylbenzene	ND		1.0	ug/L		11/19/19 21:39		1
o-Xylene	ND		1.0	ug/L		11/19/19 21:39		1
p-Isopropyltoluene	ND		1.0	ug/L		11/19/19 21:39		1
sec-Butylbenzene	ND		1.0	ug/L		11/19/19 21:39		1
Styrene	ND		1.0	ug/L		11/19/19 21:39		1
tert-Butylbenzene	ND		1.0	ug/L		11/19/19 21:39		1
Tetrachloroethene	ND		1.0	ug/L		11/19/19 21:39		1
Toluene	ND		1.0	ug/L		11/19/19 21:39		1
trans-1,2-Dichloroethene	ND		1.0	ug/L		11/19/19 21:39		1
trans-1,3-Dichloropropene	ND		0.50	ug/L		11/19/19 21:39		1
Trichloroethene	ND		1.0	ug/L		11/19/19 21:39		1
Trichlorofluoromethane	ND		1.0	ug/L		11/19/19 21:39		1
Vinyl chloride	ND		0.50	ug/L		11/19/19 21:39		1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		11/19/19 10:34	1
4-Bromofluorobenzene (Surr)	101		80 - 120		11/19/19 10:34	1
Dibromofluoromethane (Surr)	97		76 - 132		11/19/19 10:34	1
Toluene-d8 (Surr)	114		80 - 128		11/19/19 10:34	1
1,2-Dichloroethane-d4 (Surr)	93		70 - 130		11/19/19 21:39	1
4-Bromofluorobenzene (Surr)	98		80 - 120		11/19/19 21:39	1
Dibromofluoromethane (Surr)	96		76 - 132		11/19/19 21:39	1
Toluene-d8 (Surr)	102		80 - 128		11/19/19 21:39	1

## Method: 8270C SIM - 1,4 Dioxane by SIM

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	17		0.49	ug/L		11/19/19 08:01	11/20/19 10:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
1,4-Dioxane-d8 (Surr)	64		27 - 120		11/19/19 08:01	11/20/19 10:08	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
1,2-Dichlorobenzene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		20	ug/L		11/20/19 09:19	11/22/19 13:07	1
1,3-Dichlorobenzene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1

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# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

**Client Sample ID: GRAB\_20191115**

Date Collected: 11/15/19 08:30

Date Received: 11/15/19 11:10

**Lab Sample ID: 440-254649-2**

Matrix: Water

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,4,5-Trichlorophenol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,4,6-Trichlorophenol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,4-Dichlorophenol	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,4-Dimethylphenol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,4-Dinitrophenol	ND		39	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,4-Dinitrotoluene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,6-Dinitrotoluene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2-Chloronaphthalene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2-Chlorophenol	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2-Methylnaphthalene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2-Methylphenol	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2-Nitroaniline	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
2-Nitrophenol	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
3,3'-Dichlorobenzidine	ND		39	ug/L	11/20/19 09:19	11/22/19 13:07		1
3-Methylphenol + 4-Methylphenol	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
3-Nitroaniline	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
4,6-Dinitro-2-methylphenol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
4-Bromophenyl phenyl ether	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
4-Chloro-3-methylphenol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
4-Chloroaniline	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
4-Chlorophenyl phenyl ether	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
4-Nitroaniline	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
4-Nitrophenol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Acenaphthene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Acenaphthylene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Aniline	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Anthracene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzidine	ND *		39	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzo[a]anthracene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzo[a]pyrene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzo[b]fluoranthene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzo[g,h,i]perylene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzo[k]fluoranthene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzoic acid	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzyl alcohol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
bis (2-chloroisopropyl) ether	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Bis(2-chloroethoxy)methane	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Bis(2-chloroethyl)ether	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Bis(2-ethylhexyl) phthalate	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Butyl benzyl phthalate	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Chrysene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Dibenz(a,h)anthracene	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Dibenzofuran	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Diethyl phthalate	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Dimethyl phthalate	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Di-n-butyl phthalate	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Di-n-octyl phthalate	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Fluoranthene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1

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# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

**Client Sample ID: GRAB\_20191115**

Date Collected: 11/15/19 08:30

Date Received: 11/15/19 11:10

**Lab Sample ID: 440-254649-2**

Matrix: Water

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Hexachlorobenzene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Hexachlorobutadiene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Hexachlorocyclopentadiene	ND		20	ug/L		11/20/19 09:19	11/22/19 13:07	1
Hexachloroethane	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Indeno[1,2,3-cd]pyrene	ND		20	ug/L		11/20/19 09:19	11/22/19 13:07	1
Isophorone	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Naphthalene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Nitrobenzene	ND		20	ug/L		11/20/19 09:19	11/22/19 13:07	1
N-Nitrosodimethylamine	ND		20	ug/L		11/20/19 09:19	11/22/19 13:07	1
N-Nitrosodi-n-propylamine	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
N-Nitrosodiphenylamine	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Pentachlorophenol	ND		20	ug/L		11/20/19 09:19	11/22/19 13:07	1
Phenanthrene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Phenol	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Pyrene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	89		40 - 120	11/20/19 09:19	11/22/19 13:07	1
2-Fluorobiphenyl	85		50 - 120	11/20/19 09:19	11/22/19 13:07	1
2-Fluorophenol (Surr)	68		30 - 120	11/20/19 09:19	11/22/19 13:07	1
Nitrobenzene-d5 (Surr)	71		45 - 120	11/20/19 09:19	11/22/19 13:07	1
Phenol-d6 (Surr)	66		35 - 120	11/20/19 09:19	11/22/19 13:07	1
Terphenyl-d14 (Surr)	89		10 - 150	11/20/19 09:19	11/22/19 13:07	1

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.7	HF	0.1	SU		11/18/19 14:51		1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Dissolved	ND	HF	0.050	mg/L		11/19/19 17:09	11/19/19 18:05	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	8.68			SU		11/15/19 08:30		1
Field Temperature	17.40			Celsius		11/15/19 08:30		1

# Surrogate Summary

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (70-130)	BFB (80-120)	DBFM (76-132)	TOL (80-128)
440-254649-2	GRAB_20191115	100	101	97	114
440-254649-2	GRAB_20191115	93	98	96	102
440-254703-B-1 MS	Matrix Spike	99	100	97	109
440-254703-C-1 MSD	Matrix Spike Duplicate	100	101	97	110
440-254876-E-1 MS	Matrix Spike	97	101	93	101
440-254876-E-1 MSD	Matrix Spike Duplicate	100	100	96	96
LCS 440-580924/1002	Lab Control Sample	99	103	94	109
LCS 440-581077/1002	Lab Control Sample	96	101	91	95
LCS 440-581077/1003	Lab Control Sample	94	100	92	100
MB 440-580924/4	Method Blank	98	103	95	113
MB 440-581077/4	Method Blank	96	98	93	100

### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (40-120)	FBP (50-120)	2FP (30-120)	NBZ (45-120)	PHL6 (35-120)	TPHL (10-150)
440-254649-2	GRAB_20191115	89	85	68	71	66	89
550-133382-D-11-A MS	Matrix Spike	86	76	65	72	67	70
550-133382-D-11-B MSD	Matrix Spike Duplicate	87	73	61	69	61	70
LCS 440-581183/2-A	Lab Control Sample	86	80	67	72	67	94
MB 440-581183/1-A	Method Blank	84	81	65	69	62	91

### Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol (Surr)

NBZ = Nitrobenzene-d5 (Surr)

PHL6 = Phenol-d6 (Surr)

TPHL = Terphenyl-d14 (Surr)

## Method: 8270C SIM - 1,4 Dioxane by SIM

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DXE (27-120)	
440-254649-2	GRAB_20191115	64	
LCS 440-580937/2-A	Lab Control Sample	69	
LCSD 440-580937/3-A	Lab Control Sample Dup	66	
MB 440-580937/1-A	Method Blank	63	

### Surrogate Legend

DXE = 1,4-Dioxane-d8 (Surr)

Eurofins TestAmerica, Irvine

## Method Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C SIM	1,4 Dioxane by SIM	SW846	TAL IRV
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL IRV
SM 4500 H+ B	pH	SM	TAL IRV
SM 4500 S2 D	Sulfide, Total	SM	TAL IRV
SM 5220D	COD	SM	TAL IRV
Field Sampling	Field Sampling	EPA	TAL IRV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV
SM 4500 S2 B	Sulfide, Separation of Soluble and Insoluble	SM	TAL IRV

### Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# Lab Chronicle

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

**Client Sample ID: COMPOSITE\_20191115**

**Lab Sample ID: 440-254649-1**

**Matrix: Water**

Date Collected: 11/15/19 08:20

Date Received: 11/15/19 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	580480	11/15/19 17:14	XL	TAL IRV
Total/NA	Analysis	SM 5220D		1	2 mL	2 mL	581224	11/20/19 10:19	KYP	TAL IRV

**Client Sample ID: GRAB\_20191115**

**Lab Sample ID: 440-254649-2**

**Matrix: Water**

Date Collected: 11/15/19 08:30

Date Received: 11/15/19 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	580924	11/19/19 10:34	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	581077	11/19/19 21:39	WC	TAL IRV
Total/NA	Prep	3520C			1025 mL	2.0 mL	581183	11/20/19 09:19	NAM	TAL IRV
Total/NA	Analysis	8270C		1			581738	11/22/19 13:07	HN	TAL IRV
Total/NA	Prep	3520C			1015 mL	1.0 mL	580937	11/19/19 08:01	NAM	TAL IRV
Total/NA	Analysis	8270C SIM		1			581174	11/20/19 10:08	L1B	TAL IRV
Total/NA	Analysis	SM 4500 H+ B		1			580797	11/18/19 14:51	ST	TAL IRV
Dissolved	Prep	SM 4500 S2 B			7.5 mL	7.5 mL	581088	11/19/19 17:09	KMY	TAL IRV
Dissolved	Analysis	SM 4500 S2 D		1			581109	11/19/19 18:05	KMY	TAL IRV
Total/NA	Analysis	Field Sampling		1			580642	11/15/19 08:30	P1A	TAL IRV

## Laboratory References:

TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-580924/4**

**Matrix: Water**

**Analysis Batch: 580924**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chloroethyl vinyl ether	ND		2.0	ug/L			11/19/19 08:56	1
Acrolein	ND		5.0	ug/L			11/19/19 08:56	1
Acrylonitrile	ND		2.0	ug/L			11/19/19 08:56	1
Total Volatile Organic Compounds	ND		150	ug/L			11/19/19 08:56	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 130		11/19/19 08:56	1
4-Bromofluorobenzene (Surr)	103		80 - 120		11/19/19 08:56	1
Dibromofluoromethane (Surr)	95		76 - 132		11/19/19 08:56	1
Toluene-d8 (Surr)	113		80 - 128		11/19/19 08:56	1

**Lab Sample ID: LCS 440-580924/1002**

**Matrix: Water**

**Analysis Batch: 580924**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
2-Chloroethyl vinyl ether	25.0	16.1		ug/L		64	37 - 150
Acrolein	24.7	28.3		ug/L		114	10 - 145
Acrylonitrile	250	217		ug/L		87	48 - 140
Total Volatile Organic Compounds	5370	4150		ug/L		77	

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	94		76 - 132
Toluene-d8 (Surr)	109		80 - 128

**Lab Sample ID: 440-254703-B-1 MS**

**Matrix: Water**

**Analysis Batch: 580924**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.
2-Chloroethyl vinyl ether	ND	F2	10.0	6.28		ug/L		63	10 - 140
Acrolein	ND		9.88	9.29		ug/L		94	10 - 147
Acrylonitrile	ND		100	87.5		ug/L		87	38 - 144
Total Volatile Organic Compounds	ND		3770	3030		ug/L		80	

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	97		76 - 132
Toluene-d8 (Surr)	109		80 - 128

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-254703-C-1 MSD**

**Matrix: Water**

**Analysis Batch: 580924**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
2-Chloroethyl vinyl ether	ND	F2	10.0	10.5	F2	ug/L		105	10 - 140	51	35
Acrolein	ND		9.88	8.80		ug/L		89	10 - 147	6	40
Acrylonitrile	ND		100	82.3		ug/L		82	38 - 144	6	40
Total Volatile Organic Compounds	ND		3770	2990		ug/L		79			1

**MSD MSD**

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	97		76 - 132
Toluene-d8 (Surr)	110		80 - 128

**Lab Sample ID: MB 440-581077/4**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L			11/19/19 18:44	1
1,1,1-Trichloroethane	ND		1.0	ug/L			11/19/19 18:44	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			11/19/19 18:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	ug/L			11/19/19 18:44	1
1,1,2-Trichloroethane	ND		1.0	ug/L			11/19/19 18:44	1
1,1-Dichloroethane	ND		1.0	ug/L			11/19/19 18:44	1
1,1-Dichloroethene	ND		1.0	ug/L			11/19/19 18:44	1
1,1-Dichloropropene	ND		1.0	ug/L			11/19/19 18:44	1
1,2,3-Trichlorobenzene	ND		1.0	ug/L			11/19/19 18:44	1
1,2,3-Trichloropropane	ND		1.0	ug/L			11/19/19 18:44	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			11/19/19 18:44	1
1,2,4-Trimethylbenzene	ND		1.0	ug/L			11/19/19 18:44	1
1,2-Dibromo-3-Chloropropane	ND		5.0	ug/L			11/19/19 18:44	1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L			11/19/19 18:44	1
1,2-Dichlorobenzene	ND		1.0	ug/L			11/19/19 18:44	1
1,2-Dichloroethane	ND		1.0	ug/L			11/19/19 18:44	1
1,2-Dichloropropane	ND		1.0	ug/L			11/19/19 18:44	1
1,3,5-Trimethylbenzene	ND		1.0	ug/L			11/19/19 18:44	1
1,3-Dichlorobenzene	ND		1.0	ug/L			11/19/19 18:44	1
1,3-Dichloropropane	ND		1.0	ug/L			11/19/19 18:44	1
1,4-Dichlorobenzene	ND		1.0	ug/L			11/19/19 18:44	1
2,2-Dichloropropane	ND		1.0	ug/L			11/19/19 18:44	1
2-Chlorotoluene	ND		1.0	ug/L			11/19/19 18:44	1
4-Chlorotoluene	ND		1.0	ug/L			11/19/19 18:44	1
Acetone	ND		10	ug/L			11/19/19 18:44	1
Benzene	ND		0.50	ug/L			11/19/19 18:44	1
Bromobenzene	ND		1.0	ug/L			11/19/19 18:44	1
Bromochloromethane	ND		1.0	ug/L			11/19/19 18:44	1
Bromodichloromethane	ND		1.0	ug/L			11/19/19 18:44	1
Bromoform	ND		1.0	ug/L			11/19/19 18:44	1
Bromomethane	ND		1.0	ug/L			11/19/19 18:44	1

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** MB 440-581077/4

**Matrix:** Water

**Analysis Batch:** 581077

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		0.50	ug/L		11/19/19 18:44		1
Chlorobenzene	ND		1.0	ug/L		11/19/19 18:44		1
Chloroethane	ND		1.0	ug/L		11/19/19 18:44		1
Chloroform	ND		1.0	ug/L		11/19/19 18:44		1
Chloromethane	ND		1.0	ug/L		11/19/19 18:44		1
cis-1,2-Dichloroethene	ND		1.0	ug/L		11/19/19 18:44		1
cis-1,3-Dichloropropene	ND		0.50	ug/L		11/19/19 18:44		1
Dibromochloromethane	ND		1.0	ug/L		11/19/19 18:44		1
Dibromomethane	ND		1.0	ug/L		11/19/19 18:44		1
Dichlorodifluoromethane	ND		1.0	ug/L		11/19/19 18:44		1
Ethylbenzene	ND		1.0	ug/L		11/19/19 18:44		1
Hexachlorobutadiene	ND		1.0	ug/L		11/19/19 18:44		1
Isopropyl alcohol	ND		250	ug/L		11/19/19 18:44		1
Isopropylbenzene	ND		1.0	ug/L		11/19/19 18:44		1
m,p-Xylene	ND		1.0	ug/L		11/19/19 18:44		1
Methylene Chloride	ND		5.0	ug/L		11/19/19 18:44		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	ug/L		11/19/19 18:44		1
Naphthalene	ND		1.0	ug/L		11/19/19 18:44		1
n-Butylbenzene	ND		1.0	ug/L		11/19/19 18:44		1
N-Propylbenzene	ND		1.0	ug/L		11/19/19 18:44		1
o-Xylene	ND		1.0	ug/L		11/19/19 18:44		1
p-Isopropyltoluene	ND		1.0	ug/L		11/19/19 18:44		1
sec-Butylbenzene	ND		1.0	ug/L		11/19/19 18:44		1
Styrene	ND		1.0	ug/L		11/19/19 18:44		1
tert-Butylbenzene	ND		1.0	ug/L		11/19/19 18:44		1
Tetrachloroethene	ND		1.0	ug/L		11/19/19 18:44		1
Toluene	ND		1.0	ug/L		11/19/19 18:44		1
trans-1,2-Dichloroethene	ND		1.0	ug/L		11/19/19 18:44		1
trans-1,3-Dichloropropene	ND		0.50	ug/L		11/19/19 18:44		1
Trichloroethene	ND		1.0	ug/L		11/19/19 18:44		1
Trichlorofluoromethane	ND		1.0	ug/L		11/19/19 18:44		1
Vinyl chloride	ND		0.50	ug/L		11/19/19 18:44		1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 130		11/19/19 18:44	1
4-Bromofluorobenzene (Surr)	98		80 - 120		11/19/19 18:44	1
Dibromofluoromethane (Surr)	93		76 - 132		11/19/19 18:44	1
Toluene-d8 (Surr)	100		80 - 128		11/19/19 18:44	1

**Lab Sample ID:** LCS 440-581077/1002

**Matrix:** Water

**Analysis Batch:** 581077

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	25.0	21.7		ug/L		87	60 - 141
1,1,1-Trichloroethane	25.0	22.1		ug/L		88	70 - 130
1,1,2,2-Tetrachloroethane	25.0	24.7		ug/L		99	63 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	23.3		ug/L		93	60 - 140

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-581077/1002**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,1,2-Trichloroethane	25.0	26.7		ug/L		107	70 - 130
1,1-Dichloroethane	25.0	25.7		ug/L		103	64 - 130
1,1-Dichloroethene	25.0	23.1		ug/L		93	70 - 130
1,1-Dichloropropene	25.0	24.0		ug/L		96	70 - 130
1,2,3-Trichlorobenzene	25.0	20.7		ug/L		83	60 - 140
1,2,3-Trichloropropane	25.0	23.6		ug/L		95	63 - 130
1,2,4-Trichlorobenzene	25.0	21.6		ug/L		87	60 - 140
1,2,4-Trimethylbenzene	25.0	24.0		ug/L		96	70 - 135
1,2-Dibromo-3-Chloropropane	25.0	20.5		ug/L		82	52 - 140
1,2-Dibromoethane (EDB)	25.0	23.6		ug/L		95	70 - 130
1,2-Dichlorobenzene	25.0	21.8		ug/L		87	70 - 130
1,2-Dichloroethane	25.0	22.7		ug/L		91	57 - 138
1,2-Dichloropropane	25.0	27.3		ug/L		109	67 - 130
1,3,5-Trimethylbenzene	25.0	23.7		ug/L		95	70 - 136
1,3-Dichlorobenzene	25.0	22.6		ug/L		91	70 - 130
1,3-Dichloropropane	25.0	25.9		ug/L		104	70 - 130
1,4-Dichlorobenzene	25.0	23.2		ug/L		93	70 - 130
2,2-Dichloropropane	25.0	21.8		ug/L		87	68 - 141
2-Chlorotoluene	25.0	24.1		ug/L		96	70 - 130
4-Chlorotoluene	25.0	25.8		ug/L		103	70 - 130
Acetone	125	118		ug/L		95	10 - 150
Benzene	25.0	25.4		ug/L		101	68 - 130
Bromobenzene	25.0	24.7		ug/L		99	70 - 130
Bromochloromethane	25.0	22.4		ug/L		89	70 - 130
Bromodichloromethane	25.0	25.0		ug/L		100	70 - 132
Bromoform	25.0	26.1		ug/L		104	60 - 148
Bromomethane	25.0	23.2		ug/L		93	64 - 139
Carbon tetrachloride	25.0	22.0		ug/L		88	60 - 150
Chlorobenzene	25.0	24.4		ug/L		98	70 - 130
Chloroethane	25.0	24.1		ug/L		96	64 - 135
Chloroform	25.0	22.9		ug/L		92	70 - 130
Chloromethane	25.0	21.9		ug/L		88	47 - 140
cis-1,2-Dichloroethene	25.0	24.6		ug/L		98	70 - 133
cis-1,3-Dichloropropene	25.0	24.8		ug/L		99	70 - 133
Dibromochloromethane	25.0	24.1		ug/L		96	69 - 145
Dibromomethane	25.0	25.6		ug/L		102	70 - 130
Dichlorodifluoromethane	25.0	18.5		ug/L		74	29 - 150
Ethylbenzene	25.0	25.0		ug/L		100	70 - 130
Hexachlorobutadiene	25.0	21.1		ug/L		84	10 - 150
Isopropylbenzene	25.0	23.6		ug/L		94	70 - 136
m,p-Xylene	25.0	24.7		ug/L		99	70 - 130
Methylene Chloride	25.0	22.1		ug/L		89	52 - 130
Methyl-t-Butyl Ether (MTBE)	25.0	22.8		ug/L		91	63 - 131
Naphthalene	25.0	19.0		ug/L		76	60 - 140
n-Butylbenzene	25.0	23.6		ug/L		94	65 - 150
N-Propylbenzene	25.0	24.6		ug/L		98	67 - 139
o-Xylene	25.0	24.2		ug/L		97	70 - 130
p-Isopropyltoluene	25.0	22.0		ug/L		88	70 - 132
sec-Butylbenzene	25.0	23.4		ug/L		93	70 - 138

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-581077/1002**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Styrene	25.0	25.8		ug/L		103	70 - 134
tert-Butylbenzene	25.0	22.0		ug/L		88	70 - 130
Tetrachloroethene	25.0	22.8		ug/L		91	70 - 130
Toluene	25.0	24.5		ug/L		98	70 - 130
trans-1,2-Dichloroethene	25.0	24.6		ug/L		98	70 - 130
trans-1,3-Dichloropropene	25.0	25.1		ug/L		101	70 - 132
Trichloroethene	25.0	23.7		ug/L		95	70 - 130
Trichlorofluoromethane	25.0	20.4		ug/L		82	60 - 150
Vinyl chloride	25.0	21.6		ug/L		87	59 - 133

**LCS LCS**

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	91		76 - 132
Toluene-d8 (Surr)	95		80 - 128

**Lab Sample ID: LCS 440-581077/1003**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Isopropyl alcohol	250	252		ug/L		101	49 - 142

**LCS LCS**

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		70 - 130
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	92		76 - 132
Toluene-d8 (Surr)	100		80 - 128

**Lab Sample ID: 440-254876-E-1 MS**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,1,1,2-Tetrachloroethane	ND		10.0	8.44		ug/L		84	60 - 149
1,1,1-Trichloroethane	ND		10.0	8.67		ug/L		87	70 - 130
1,1,2,2-Tetrachloroethane	ND		10.0	9.55		ug/L		96	63 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	8.93		ug/L		89	60 - 140
1,1,2-Trichloroethane	ND		10.0	9.93		ug/L		99	70 - 130
1,1-Dichloroethane	ND		10.0	9.39		ug/L		94	65 - 130
1,1-Dichloroethene	ND		10.0	9.23		ug/L		92	70 - 130
1,1-Dichloropropene	ND		10.0	9.04		ug/L		90	64 - 130
1,2,3-Trichlorobenzene	ND		10.0	7.88		ug/L		79	60 - 140
1,2,3-Trichloropropane	ND		10.0	9.73		ug/L		97	60 - 130
1,2,4-Trichlorobenzene	ND		10.0	8.38		ug/L		84	60 - 140
1,2,4-Trimethylbenzene	ND		10.0	9.94		ug/L		99	70 - 130
1,2-Dibromo-3-Chloropropane	ND		10.0	7.83		ug/L		78	48 - 140

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-254876-E-1 MS**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,2-Dibromoethane (EDB)	ND		10.0	8.67		ug/L	87	70 - 131	
1,2-Dichlorobenzene	ND		10.0	8.62		ug/L	86	70 - 130	
1,2-Dichloroethane	ND		10.0	8.70		ug/L	87	56 - 146	
1,2-Dichloropropane	ND		10.0	10.3		ug/L	103	69 - 130	
1,3,5-Trimethylbenzene	ND		10.0	9.45		ug/L	94	70 - 130	
1,3-Dichlorobenzene	ND		10.0	9.02		ug/L	90	70 - 130	
1,3-Dichloropropane	ND		10.0	9.85		ug/L	99	70 - 130	
1,4-Dichlorobenzene	ND		10.0	8.98		ug/L	90	70 - 130	
2,2-Dichloropropane	ND		10.0	8.17		ug/L	82	69 - 138	
2-Chlorotoluene	ND		10.0	9.71		ug/L	97	70 - 130	
4-Chlorotoluene	ND		10.0	10.1		ug/L	101	70 - 130	
Acetone	ND		50.0	45.6		ug/L	91	10 - 150	
Benzene	ND		10.0	9.56		ug/L	96	66 - 130	
Bromobenzene	ND		10.0	9.24		ug/L	92	70 - 130	
Bromochloromethane	ND		10.0	8.61		ug/L	86	70 - 130	
Bromodichloromethane	ND		10.0	9.71		ug/L	97	70 - 138	
Bromoform	ND		10.0	10.6		ug/L	106	59 - 150	
Bromomethane	ND		10.0	8.22		ug/L	82	62 - 131	
Carbon tetrachloride	ND		10.0	8.29		ug/L	83	60 - 150	
Chlorobenzene	ND		10.0	9.33		ug/L	93	70 - 130	
Chloroethane	ND		10.0	8.74		ug/L	87	68 - 130	
Chloroform	ND		10.0	8.56		ug/L	86	70 - 130	
Chloromethane	ND		10.0	7.57		ug/L	76	39 - 144	
cis-1,2-Dichloroethene	ND		10.0	9.36		ug/L	94	70 - 130	
cis-1,3-Dichloropropene	ND		10.0	9.61		ug/L	96	70 - 133	
Dibromochloromethane	ND		10.0	9.42		ug/L	94	70 - 148	
Dibromomethane	ND		10.0	9.53		ug/L	95	70 - 130	
Dichlorodifluoromethane	ND		10.0	7.32		ug/L	73	25 - 142	
Ethylbenzene	ND		10.0	9.54		ug/L	95	70 - 130	
Hexachlorobutadiene	ND		10.0	8.31		ug/L	83	10 - 150	
Isopropyl alcohol	ND		250	345		ug/L	138	46 - 142	
Isopropylbenzene	ND		10.0	9.57		ug/L	96	70 - 132	
m,p-Xylene	ND		10.0	9.76		ug/L	98	70 - 133	
Methylene Chloride	ND		10.0	8.22		ug/L	82	52 - 130	
Methyl-t-Butyl Ether (MTBE)	ND		10.0	8.74		ug/L	87	70 - 130	
Naphthalene	ND		10.0	7.05		ug/L	71	60 - 140	
n-Butylbenzene	ND		10.0	9.68		ug/L	97	61 - 149	
N-Propylbenzene	ND		10.0	9.83		ug/L	98	66 - 135	
o-Xylene	ND		10.0	9.66		ug/L	97	70 - 133	
p-Isopropyltoluene	ND		10.0	8.77		ug/L	88	70 - 130	
sec-Butylbenzene	ND		10.0	9.29		ug/L	93	67 - 134	
Styrene	ND		10.0	10.4		ug/L	101	29 - 150	
tert-Butylbenzene	ND		10.0	8.57		ug/L	86	70 - 130	
Tetrachloroethene	ND		10.0	8.84		ug/L	88	70 - 137	
Toluene	ND		10.0	9.94		ug/L	93	70 - 130	
trans-1,2-Dichloroethene	ND		10.0	8.75		ug/L	87	70 - 130	
trans-1,3-Dichloropropene	ND		10.0	9.92		ug/L	99	70 - 138	
Trichloroethene	ND		10.0	9.42		ug/L	94	70 - 130	
Trichlorofluoromethane	ND		10.0	7.92		ug/L	79	60 - 150	

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-254876-E-1 MS**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	ND		10.0	8.05		ug/L		80	50 - 137
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	97		70 - 130						
4-Bromofluorobenzene (Surr)	101		80 - 120						
Dibromofluoromethane (Surr)	93		76 - 132						
Toluene-d8 (Surr)	101		80 - 128						

**Lab Sample ID: 440-254876-E-1 MSD**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		10.0	9.29		ug/L		93	60 - 149	10	20
1,1,1-Trichloroethane	ND		10.0	9.58		ug/L		96	70 - 130	10	20
1,1,2,2-Tetrachloroethane	ND		10.0	10.6		ug/L		106	63 - 130	10	30
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	10.2		ug/L		102	60 - 140	13	20
1,1,2-Trichloroethane	ND		10.0	10.9		ug/L		109	70 - 130	9	25
1,1-Dichloroethane	ND		10.0	10.7		ug/L		107	65 - 130	13	20
1,1-Dichloroethene	ND		10.0	9.85		ug/L		99	70 - 130	7	20
1,1-Dichloropropene	ND		10.0	10.2		ug/L		102	64 - 130	12	20
1,2,3-Trichlorobenzene	ND		10.0	8.72		ug/L		87	60 - 140	10	20
1,2,3-Trichloropropane	ND		10.0	9.97		ug/L		100	60 - 130	2	30
1,2,4-Trichlorobenzene	ND		10.0	9.32		ug/L		93	60 - 140	11	20
1,2,4-Trimethylbenzene	ND		10.0	10.8		ug/L		108	70 - 130	8	25
1,2-Dibromo-3-Chloropropane	ND		10.0	9.53		ug/L		95	48 - 140	20	30
1,2-Dibromoethane (EDB)	ND		10.0	10.5		ug/L		105	70 - 131	19	25
1,2-Dichlorobenzene	ND		10.0	9.34		ug/L		93	70 - 130	8	20
1,2-Dichloroethane	ND		10.0	10.0		ug/L		100	56 - 146	14	20
1,2-Dichloropropane	ND		10.0	11.3		ug/L		113	69 - 130	10	20
1,3,5-Trimethylbenzene	ND		10.0	10.3		ug/L		103	70 - 130	9	20
1,3-Dichlorobenzene	ND		10.0	9.85		ug/L		98	70 - 130	9	20
1,3-Dichloropropane	ND		10.0	11.0		ug/L		110	70 - 130	11	25
1,4-Dichlorobenzene	ND		10.0	10.1		ug/L		101	70 - 130	12	20
2,2-Dichloropropane	ND		10.0	10.3		ug/L		103	69 - 138	23	25
2-Chlorotoluene	ND		10.0	10.4		ug/L		104	70 - 130	7	20
4-Chlorotoluene	ND		10.0	11.1		ug/L		111	70 - 130	10	20
Acetone	ND		50.0	54.4		ug/L		109	10 - 150	18	35
Benzene	ND		10.0	10.5		ug/L		105	66 - 130	9	20
Bromobenzene	ND		10.0	10.5		ug/L		105	70 - 130	12	20
Bromochloromethane	ND		10.0	9.58		ug/L		96	70 - 130	11	25
Bromodichloromethane	ND		10.0	11.3		ug/L		113	70 - 138	15	20
Bromoform	ND		10.0	12.1		ug/L		121	59 - 150	13	25
Bromomethane	ND		10.0	8.90		ug/L		89	62 - 131	8	25
Carbon tetrachloride	ND		10.0	9.20		ug/L		92	60 - 150	10	25
Chlorobenzene	ND		10.0	10.2		ug/L		102	70 - 130	9	20
Chloroethane	ND		10.0	10.6		ug/L		106	68 - 130	20	25
Chloroform	ND		10.0	9.40		ug/L		94	70 - 130	9	20

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-254876-E-1 MSD**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	RPD Limit
Chloromethane	ND		10.0	8.50		ug/L	85	39 - 144	12	25
cis-1,2-Dichloroethene	ND		10.0	10.3		ug/L	103	70 - 130	9	20
cis-1,3-Dichloropropene	ND		10.0	10.8		ug/L	108	70 - 133	11	20
Dibromochloromethane	ND		10.0	10.6		ug/L	106	70 - 148	12	25
Dibromomethane	ND		10.0	10.9		ug/L	109	70 - 130	13	25
Dichlorodifluoromethane	ND		10.0	8.73		ug/L	87	25 - 142	18	30
Ethylbenzene	ND		10.0	10.8		ug/L	108	70 - 130	12	20
Hexachlorobutadiene	ND		10.0	9.54		ug/L	95	10 - 150	14	20
Isopropyl alcohol	ND		250	290		ug/L	116	46 - 142	17	40
Isopropylbenzene	ND		10.0	10.5		ug/L	105	70 - 132	9	20
m,p-Xylene	ND		10.0	10.8		ug/L	108	70 - 133	10	25
Methylene Chloride	ND		10.0	9.06		ug/L	91	52 - 130	10	20
Methyl-t-Butyl Ether (MTBE)	ND		10.0	9.41		ug/L	94	70 - 130	7	25
Naphthalene	ND		10.0	8.37		ug/L	84	60 - 140	17	30
n-Butylbenzene	ND		10.0	10.0		ug/L	100	61 - 149	3	20
N-Propylbenzene	ND		10.0	10.8		ug/L	108	66 - 135	9	20
o-Xylene	ND		10.0	10.5		ug/L	105	70 - 133	8	20
p-Isopropyltoluene	ND		10.0	9.65		ug/L	96	70 - 130	10	20
sec-Butylbenzene	ND		10.0	10.2		ug/L	102	67 - 134	9	20
Styrene	ND		10.0	11.0		ug/L	107	29 - 150	6	35
tert-Butylbenzene	ND		10.0	9.32		ug/L	93	70 - 130	8	20
Tetrachloroethene	ND		10.0	9.91		ug/L	99	70 - 137	11	20
Toluene	ND		10.0	10.9		ug/L	102	70 - 130	9	20
trans-1,2-Dichloroethene	ND		10.0	9.66		ug/L	97	70 - 130	10	20
trans-1,3-Dichloropropene	ND		10.0	10.8		ug/L	108	70 - 138	9	25
Trichloroethene	ND		10.0	9.81		ug/L	98	70 - 130	4	20
Trichlorofluoromethane	ND		10.0	9.06		ug/L	91	60 - 150	13	25
Vinyl chloride	ND		10.0	8.59		ug/L	86	50 - 137	6	30
<hr/>										
<b>MSD MSD</b>										
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
1,2-Dichloroethane-d4 (Surr)	100		70 - 130							
4-Bromofluorobenzene (Surr)	100		80 - 120							
Dibromofluoromethane (Surr)	96		76 - 132							
Toluene-d8 (Surr)	96		80 - 128							

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-581183/1-A**

**Matrix: Water**

**Analysis Batch: 581738**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 581183**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
1,2-Dichlorobenzene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
1,2-Diphenylhydrazine(as Azobenzene)	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
1,3-Dichlorobenzene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
1,4-Dichlorobenzene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2,4,5-Trichlorophenol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-581183/1-A**

**Matrix: Water**

**Analysis Batch: 581738**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 581183**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
2,4-Dichlorophenol	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2,4-Dimethylphenol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
2,4-Dinitrophenol	ND		40	ug/L	11/20/19 07:48	11/22/19 11:05		1
2,4-Dinitrotoluene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2,6-Dinitrotoluene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2-Chloronaphthalene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2-Chlorophenol	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2-Methylnaphthalene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2-Methylphenol	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2-Nitroaniline	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
2-Nitrophenol	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
3,3'-Dichlorobenzidine	ND		40	ug/L	11/20/19 07:48	11/22/19 11:05		1
3-Methylphenol + 4-Methylphenol	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
3-Nitroaniline	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
4,6-Dinitro-2-methylphenol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
4-Bromophenyl phenyl ether	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
4-Chloro-3-methylphenol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
4-Chloroaniline	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
4-Chlorophenyl phenyl ether	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
4-Nitroaniline	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
4-Nitrophenol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Acenaphthene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Acenaphthylene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Aniline	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Anthracene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzidine	ND		40	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzo[a]anthracene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzo[a]pyrene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzo[b]fluoranthene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzo[g,h,i]perylene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzo[k]fluoranthene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzoic acid	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzyl alcohol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
bis (2-chloroisopropyl) ether	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Bis(2-chloroethoxy)methane	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Bis(2-chloroethyl)ether	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Bis(2-ethylhexyl) phthalate	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Butyl benzyl phthalate	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Chrysene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Dibenz(a,h)anthracene	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Dibenzofuran	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Diethyl phthalate	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Dimethyl phthalate	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Di-n-butyl phthalate	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Di-n-octyl phthalate	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Fluoranthene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Fluorene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Hexachlorobenzene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** MB 440-581183/1-A

**Matrix:** Water

**Analysis Batch:** 581738

**Client Sample ID:** Method Blank

**Prep Type:** Total/NA

**Prep Batch:** 581183

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Hexachlorocyclopentadiene	ND		20	ug/L		11/20/19 07:48	11/22/19 11:05	1
Hexachloroethane	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Indeno[1,2,3-cd]pyrene	ND		20	ug/L		11/20/19 07:48	11/22/19 11:05	1
Isophorone	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Naphthalene	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Nitrobenzene	ND		20	ug/L		11/20/19 07:48	11/22/19 11:05	1
N-Nitrosodimethylamine	ND		20	ug/L		11/20/19 07:48	11/22/19 11:05	1
N-Nitrosodi-n-propylamine	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
N-Nitrosodiphenylamine	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Pentachlorophenol	ND		20	ug/L		11/20/19 07:48	11/22/19 11:05	1
Phenanthrene	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Phenol	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Pyrene	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surrogate)	84		40 - 120		11/20/19 07:48	11/22/19 11:05
2-Fluorobiphenyl	81		50 - 120		11/20/19 07:48	11/22/19 11:05
2-Fluorophenol (Surrogate)	65		30 - 120		11/20/19 07:48	11/22/19 11:05
Nitrobenzene-d5 (Surrogate)	69		45 - 120		11/20/19 07:48	11/22/19 11:05
Phenol-d6 (Surrogate)	62		35 - 120		11/20/19 07:48	11/22/19 11:05
Terphenyl-d14 (Surrogate)	91		10 - 150		11/20/19 07:48	11/22/19 11:05

**Lab Sample ID:** LCS 440-581183/2-A

**Matrix:** Water

**Analysis Batch:** 581738

**Client Sample ID:** Lab Control Sample

**Prep Type:** Total/NA

**Prep Batch:** 581183

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2,4-Trichlorobenzene	100	75.3		ug/L		75	25 - 84
1,2-Dichlorobenzene	100	70.5		ug/L		70	24 - 85
1,2-Diphenylhydrazine(as Azobenzene)	100	76.2		ug/L		76	44 - 113
1,3-Dichlorobenzene	100	67.4		ug/L		67	20 - 80
1,4-Dichlorobenzene	100	69.1		ug/L		69	22 - 81
2,4,5-Trichlorophenol	100	89.2		ug/L		89	24 - 121
2,4,6-Trichlorophenol	100	88.0		ug/L		88	20 - 121
2,4-Dichlorophenol	100	81.7		ug/L		82	23 - 113
2,4-Dimethylphenol	100	73.0		ug/L		73	39 - 94
2,4-Dinitrophenol	200	168		ug/L		84	23 - 134
2,4-Dinitrotoluene	100	90.9		ug/L		91	54 - 115
2,6-Dinitrotoluene	100	87.5		ug/L		88	50 - 115
2-Chloronaphthalene	100	87.7		ug/L		88	34 - 102
2-Chlorophenol	100	74.3		ug/L		74	20 - 106
2-Methylnaphthalene	100	77.3		ug/L		77	34 - 98
2-Methylphenol	100	70.8		ug/L		71	36 - 103
2-Nitroaniline	100	76.8		ug/L		77	48 - 111
2-Nitrophenol	100	87.3		ug/L		87	20 - 117
3,3'-Dichlorobenzidine	100	83.9		ug/L		84	22 - 97
3-Methylphenol + 4-Methylphenol	100	77.1		ug/L		77	35 - 106

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-581183/2-A**

**Matrix: Water**

**Analysis Batch: 581738**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 581183**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
3-Nitroaniline	100	78.6		ug/L	79	51 - 116		
4,6-Dinitro-2-methylphenol	200	161		ug/L	81	28 - 139		
4-Bromophenyl phenyl ether	100	84.1		ug/L	84	42 - 113		
4-Chloro-3-methylphenol	100	76.5		ug/L	76	44 - 110		
4-Chloroaniline	100	72.6		ug/L	73	42 - 109		
4-Chlorophenyl phenyl ether	100	90.5		ug/L	90	38 - 115		
4-Nitroaniline	100	86.8		ug/L	87	50 - 116		
4-Nitrophenol	200	161		ug/L	81	26 - 132		
Acenaphthene	100	79.9		ug/L	80	37 - 107		
Acenaphthylene	100	81.0		ug/L	81	39 - 107		
Aniline	100	65.9		ug/L	66	27 - 115		
Anthracene	100	85.3		ug/L	85	42 - 120		
Benzidine	100	ND *		ug/L	2	5 - 150		
Benzo[a]anthracene	100	92.7		ug/L	93	42 - 115		
Benzo[a]pyrene	100	84.6		ug/L	85	41 - 117		
Benzo[b]fluoranthene	100	86.5		ug/L	87	36 - 113		
Benzo[g,h,i]perylene	100	86.3		ug/L	86	37 - 115		
Benzo[k]fluoranthene	100	86.8		ug/L	87	42 - 122		
Benzoic acid	100	90.5		ug/L	91	15 - 121		
Benzyl alcohol	100	72.8		ug/L	73	39 - 106		
bis (2-chloroisopropyl) ether	100	55.0		ug/L	55	38 - 104		
Bis(2-chloroethoxy)methane	100	74.8		ug/L	75	47 - 104		
Bis(2-chloroethyl)ether	100	69.8		ug/L	70	42 - 99		
Bis(2-ethylhexyl) phthalate	100	90.4		ug/L	90	43 - 124		
Butyl benzyl phthalate	100	93.8		ug/L	94	44 - 122		
Chrysene	100	95.4		ug/L	95	42 - 118		
Dibenz(a,h)anthracene	100	86.1		ug/L	86	40 - 114		
Dibenzofuran	100	83.7		ug/L	84	37 - 113		
Diethyl phthalate	100	87.1		ug/L	87	51 - 120		
Dimethyl phthalate	100	88.5		ug/L	88	49 - 113		
Di-n-butyl phthalate	100	86.2		ug/L	86	47 - 125		
Di-n-octyl phthalate	100	93.2		ug/L	93	42 - 125		
Fluoranthene	100	87.5		ug/L	87	44 - 119		
Fluorene	100	86.7		ug/L	87	39 - 116		
Hexachlorobenzene	100	84.6		ug/L	85	43 - 112		
Hexachlorobutadiene	100	66.4		ug/L	66	14 - 77		
Hexachlorocyclopentadiene	100	43.3		ug/L	43	10 - 77		
Hexachloroethane	100	64.5		ug/L	65	13 - 75		
Indeno[1,2,3-cd]pyrene	100	82.9		ug/L	83	35 - 116		
Isophorone	100	74.7		ug/L	75	48 - 107		
Naphthalene	100	76.8		ug/L	77	33 - 95		
Nitrobenzene	100	68.4		ug/L	68	42 - 99		
N-Nitrosodimethylamine	100	61.6		ug/L	62	35 - 96		
N-Nitrosodi-n-propylamine	100	71.3		ug/L	71	44 - 111		
N-Nitrosodiphenylamine	100	88.2		ug/L	88	46 - 116		
Pentachlorophenol	200	145		ug/L	73	26 - 136		
Phenanthrene	100	85.3		ug/L	85	43 - 120		
Phenol	100	72.5		ug/L	72	25 - 99		
Pyrene	100	93.4		ug/L	93	43 - 119		

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	LCS	LCS	%Recovery	Qualifier	Limits
2,4,6-Tribromophenol (Surr)		86			40 - 120
2-Fluorobiphenyl		80			50 - 120
2-Fluorophenol (Surr)		67			30 - 120
Nitrobenzene-d5 (Surr)		72			45 - 120
Phenol-d6 (Surr)		67			35 - 120
Terphenyl-d14 (Surr)		94			10 - 150

Lab Sample ID: 550-133382-D-11-A MS

Matrix: Water

Analysis Batch: 581738

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 581183

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.	Limits
1,2,4-Trichlorobenzene	ND		109	69.5		ug/L		64	45 - 120	
1,2-Dichlorobenzene	ND		109	60.8		ug/L		56	40 - 120	
1,2-Diphenylhydrazine(as Azobenzene)	ND		109	81.2		ug/L		74	60 - 120	
1,3-Dichlorobenzene	ND		109	55.1		ug/L		50	35 - 120	
1,4-Dichlorobenzene	ND		109	57.6		ug/L		53	35 - 120	
2,4,5-Trichlorophenol	ND		109	95.1		ug/L		87	55 - 120	
2,4,6-Trichlorophenol	ND		109	93.9		ug/L		86	55 - 120	
2,4-Dichlorophenol	ND		109	90.4		ug/L		83	55 - 120	
2,4-Dimethylphenol	32		109	120		ug/L		80	40 - 120	
2,4-Dinitrophenol	ND		219	204		ug/L		93	40 - 120	
2,4-Dinitrotoluene	ND		109	101		ug/L		92	65 - 120	
2,6-Dinitrotoluene	ND		109	98.3		ug/L		90	65 - 120	
2-Chloronaphthalene	ND		109	90.0		ug/L		82	60 - 120	
2-Chlorophenol	ND		109	82.3		ug/L		75	45 - 120	
2-Methylnaphthalene	ND		109	83.1		ug/L		70	55 - 120	
2-Methylphenol	ND		109	80.6		ug/L		71	50 - 120	
2-Nitroaniline	ND		109	86.0		ug/L		79	65 - 120	
2-Nitrophenol	ND		109	93.3		ug/L		85	50 - 120	
3,3'-Dichlorobenzidine	ND F1		109	ND F1		ug/L		0	45 - 135	
3-Methylphenol + 4-Methylphenol	ND		109	88.7		ug/L		78	50 - 120	
3-Nitroaniline	ND F1		109	66.6		ug/L		61	60 - 120	
4,6-Dinitro-2-methylphenol	ND		219	195		ug/L		89	45 - 120	
4-Bromophenyl phenyl ether	ND		109	85.2		ug/L		78	60 - 120	
4-Chloro-3-methylphenol	ND		109	85.5		ug/L		78	60 - 120	
4-Chloroaniline	ND		109	71.6		ug/L		66	55 - 120	
4-Chlorophenyl phenyl ether	ND		109	91.7		ug/L		84	65 - 120	
4-Nitroaniline	ND		109	93.1		ug/L		85	55 - 125	
4-Nitrophenol	ND		219	181		ug/L		83	45 - 120	
Acenaphthene	ND		109	83.2		ug/L		76	60 - 120	
Acenaphthylene	ND		109	80.9		ug/L		74	60 - 120	
Aniline	ND		109	69.1		ug/L		63	35 - 120	
Anthracene	ND		109	91.9		ug/L		84	65 - 120	
Benzidine	ND F1 *		109	ND F1		ug/L		0	30 - 160	
Benzo[a]anthracene	ND		109	100		ug/L		92	65 - 120	
Benzo[a]pyrene	ND		109	90.5		ug/L		83	55 - 130	
Benzo[b]fluoranthene	ND		109	92.9		ug/L		85	55 - 125	
Benzo[g,h,i]perylene	ND		109	100		ug/L		92	45 - 135	
Benzo[k]fluoranthene	ND		109	90.7		ug/L		83	55 - 125	
Benzoic acid	ND		109	119		ug/L		94	25 - 125	

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 550-133382-D-11-A MS**

**Matrix: Water**

**Analysis Batch: 581738**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 581183**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.	Limits
Benzyl alcohol	ND		109	91.9		ug/L		84	40 - 120	
bis (2-chloroisopropyl) ether	ND		109	59.8		ug/L		55	45 - 120	
Bis(2-chloroethoxy)methane	ND		109	81.5		ug/L		75	50 - 120	
Bis(2-chloroethyl)ether	ND		109	77.8		ug/L		71	50 - 120	
Bis(2-ethylhexyl) phthalate	ND		109	97.0		ug/L		89	44 - 124	
Butyl benzyl phthalate	ND		109	96.3		ug/L		88	55 - 130	
Chrysene	ND		109	101		ug/L		92	65 - 120	
Dibenz(a,h)anthracene	ND		109	95.7		ug/L		88	45 - 135	
Dibenzofuran	ND		109	86.6		ug/L		79	65 - 120	
Diethyl phthalate	ND		109	93.0		ug/L		85	55 - 120	
Dimethyl phthalate	ND		109	91.1		ug/L		83	30 - 120	
Di-n-butyl phthalate	ND		109	91.8		ug/L		84	60 - 125	
Di-n-octyl phthalate	ND		109	97.9		ug/L		90	65 - 135	
Fluoranthene	ND		109	93.1		ug/L		85	60 - 120	
Fluorene	ND		109	91.2		ug/L		83	65 - 120	
Hexachlorobenzene	ND		109	86.4		ug/L		79	60 - 120	
Hexachlorobutadiene	ND		109	50.2		ug/L		46	40 - 120	
Hexachlorocyclopentadiene	ND		109	41.4		ug/L		38	25 - 120	
Hexachloroethane	ND		109	59.3		ug/L		54	35 - 120	
Indeno[1,2,3-cd]pyrene	ND		109	93.5		ug/L		86	40 - 135	
Isophorone	ND		109	79.3		ug/L		73	50 - 120	
Naphthalene	57		109	133		ug/L		69	55 - 120	
Nitrobenzene	ND		109	76.7		ug/L		70	55 - 120	
N-Nitrosodimethylamine	ND		109	67.0		ug/L		61	45 - 120	
N-Nitrosodi-n-propylamine	ND		109	76.2		ug/L		70	45 - 120	
N-Nitrosodiphenylamine	ND		109	84.5		ug/L		77	50 - 150	
Pentachlorophenol	ND		219	187		ug/L		85	24 - 121	
Phenanthren	ND		109	92.8		ug/L		85	65 - 120	
Phenol	12		109	92.2		ug/L		73	40 - 120	
Pyrene	ND		109	96.4		ug/L		88	55 - 125	

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	86		40 - 120
2-Fluorobiphenyl	76		50 - 120
2-Fluorophenol (Surr)	65		30 - 120
Nitrobenzene-d5 (Surr)	72		45 - 120
Phenol-d6 (Surr)	67		35 - 120
Terphenyl-d14 (Surr)	70		10 - 150

**Lab Sample ID: 550-133382-D-11-B MSD**

**Matrix: Water**

**Analysis Batch: 581738**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

**Prep Batch: 581183**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.	RPD	Limit
1,2,4-Trichlorobenzene	ND		109	67.1		ug/L		62	45 - 120	4	20
1,2-Dichlorobenzene	ND		109	61.9		ug/L		57	40 - 120	2	25
1,2-Diphenylhydrazine(as Azobenzene)	ND		109	79.6		ug/L		73	60 - 120	2	25
1,3-Dichlorobenzene	ND		109	57.2		ug/L		53	35 - 120	4	25

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-133382-D-11-B MSD				Client Sample ID: Matrix Spike Duplicate						
Matrix: Water				Prep Type: Total/NA						
Analysis Batch: 581738				Prep Batch: 581183						
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	Limits	RPD RPD Limit
1,4-Dichlorobenzene	ND		109	59.4		ug/L	55	35 - 120	3	25
2,4,5-Trichlorophenol	ND		109	92.6		ug/L	85	55 - 120	3	30
2,4,6-Trichlorophenol	ND		109	90.8		ug/L	84	55 - 120	3	30
2,4-Dichlorophenol	ND		109	87.2		ug/L	80	55 - 120	4	25
2,4-Dimethylphenol	32		109	112		ug/L	73	40 - 120	7	25
2,4-Dinitrophenol	ND		217	211		ug/L	97	40 - 120	3	25
2,4-Dinitrotoluene	ND		109	99.2		ug/L	91	65 - 120	1	25
2,6-Dinitrotoluene	ND		109	95.0		ug/L	87	65 - 120	3	20
2-Chloronaphthalene	ND		109	87.2		ug/L	80	60 - 120	3	20
2-Chlorophenol	ND		109	79.8		ug/L	73	45 - 120	3	25
2-Methylnaphthalene	ND		109	78.6		ug/L	66	55 - 120	6	20
2-Methylphenol	ND		109	75.8		ug/L	67	50 - 120	6	25
2-Nitroaniline	ND		109	87.9		ug/L	81	65 - 120	2	25
2-Nitrophenol	ND		109	86.9		ug/L	80	50 - 120	7	25
3,3'-Dichlorobenzidine	ND F1		109	ND F1		ug/L	0	45 - 135	NC	25
3-Methylphenol + 4-Methylphenol	ND		109	84.9		ug/L	75	50 - 120	4	25
3-Nitroaniline	ND F1		109	57.7 F1		ug/L	53	60 - 120	14	25
4,6-Dinitro-2-methylphenol	ND		217	209		ug/L	96	45 - 120	7	25
4-Bromophenyl phenyl ether	ND		109	90.8		ug/L	84	60 - 120	6	25
4-Chloro-3-methylphenol	ND		109	83.5		ug/L	77	60 - 120	2	25
4-Chloroaniline	ND		109	60.0		ug/L	55	55 - 120	18	25
4-Chlorophenyl phenyl ether	ND		109	92.3		ug/L	85	65 - 120	1	25
4-Nitroaniline	ND		109	82.7		ug/L	76	55 - 125	12	25
4-Nitrophenol	ND		217	177		ug/L	81	45 - 120	2	30
Acenaphthene	ND		109	81.5		ug/L	75	60 - 120	2	25
Acenaphthylene	ND		109	78.8		ug/L	72	60 - 120	3	25
Aniline	ND		109	66.3		ug/L	61	35 - 120	4	30
Anthracene	ND		109	96.5		ug/L	89	65 - 120	5	25
Benzidine	ND F1 *		109	ND F1		ug/L	0	30 - 160	NC	35
Benzo[a]anthracene	ND		109	103		ug/L	95	65 - 120	3	20
Benzo[a]pyrene	ND		109	92.3		ug/L	85	55 - 130	2	25
Benzo[b]fluoranthene	ND		109	94.8		ug/L	87	55 - 125	2	25
Benzo[g,h,i]perylene	ND		109	102		ug/L	94	45 - 135	2	30
Benzo[k]fluoranthene	ND		109	92.8		ug/L	85	55 - 125	2	30
Benzoic acid	ND		109	113		ug/L	88	25 - 125	6	30
Benzyl alcohol	ND		109	87.3		ug/L	80	40 - 120	5	30
bis (2-chloroisopropyl) ether	ND		109	57.2		ug/L	53	45 - 120	5	25
Bis(2-chloroethoxy)methane	ND		109	77.3		ug/L	71	50 - 120	5	25
Bis(2-chloroethyl)ether	ND		109	75.0		ug/L	69	50 - 120	4	25
Bis(2-ethylhexyl) phthalate	ND		109	103		ug/L	94	44 - 124	6	25
Butyl benzyl phthalate	ND		109	101		ug/L	93	55 - 130	5	25
Chrysene	ND		109	104		ug/L	96	65 - 120	4	25
Dibenz(a,h)anthracene	ND		109	97.8		ug/L	90	45 - 135	2	30
Dibenzo furan	ND		109	84.6		ug/L	78	65 - 120	2	25
Diethyl phthalate	ND		109	94.5		ug/L	87	55 - 120	2	30
Dimethyl phthalate	ND		109	90.8		ug/L	84	30 - 120	0	30
Di-n-butyl phthalate	ND		109	97.4		ug/L	90	60 - 125	6	25
Di-n-octyl phthalate	ND		109	102		ug/L	94	65 - 135	4	20
Fluoranthene	ND		109	97.6		ug/L	90	60 - 120	5	25

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-133382-D-11-B MSD				Client Sample ID: Matrix Spike Duplicate							
Matrix: Water				Prep Type: Total/NA							
Analysis Batch: 581738				Prep Batch: 581183							
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluorene	ND		109	91.8		ug/L		84	65 - 120	1	25
Hexachlorobenzene	ND		109	89.1		ug/L		82	60 - 120	3	25
Hexachlorobutadiene	ND		109	49.2		ug/L		45	40 - 120	2	25
Hexachlorocyclopentadiene	ND		109	43.8		ug/L		40	25 - 120	6	30
Hexachloroethane	ND		109	58.7		ug/L		54	35 - 120	1	25
Indeno[1,2,3-cd]pyrene	ND		109	96.9		ug/L		89	40 - 135	4	30
Isophorone	ND		109	77.1		ug/L		71	50 - 120	3	25
Naphthalene	57		109	122		ug/L		60	55 - 120	8	25
Nitrobenzene	ND		109	72.2		ug/L		66	55 - 120	6	25
N-Nitrosodimethylamine	ND		109	62.9		ug/L		58	45 - 120	6	25
N-Nitrosodi-n-propylamine	ND		109	75.6		ug/L		70	45 - 120	1	25
N-Nitrosodiphenylamine	ND		109	87.2		ug/L		80	50 - 150	3	25
Pentachlorophenol	ND		217	189		ug/L		87	24 - 121	1	25
Phenanthrene	ND		109	96.6		ug/L		89	65 - 120	4	25
Phenol	12		109	84.6		ug/L		67	40 - 120	9	25
Pyrene	ND		109	100		ug/L		92	55 - 125	4	25
Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits								
2,4,6-Tribromophenol (Surr)	87		40 - 120								
2-Fluorobiphenyl	73		50 - 120								
2-Fluorophenol (Surr)	61		30 - 120								
Nitrobenzene-d5 (Surr)	69		45 - 120								
Phenol-d6 (Surr)	61		35 - 120								
Terphenyl-d14 (Surr)	70		10 - 150								

## Method: 8270C SIM - 1,4 Dioxane by SIM

Lab Sample ID: MB 440-580937/1-A				Client Sample ID: Method Blank							
Matrix: Water				Prep Type: Total/NA							
Analysis Batch: 581174				Prep Batch: 580937							
Analyte	MB Result	MB Qualifier	MB RL		Unit	D	Prepared	Analyzed	Dil Fac		
1,4-Dioxane	ND		0.50		ug/L		11/19/19 08:01	11/20/19 08:43		1	
Surrogate	MB %Recovery	MB Qualifier	MB Limits				Prepared	Analyzed	Dil Fac		
1,4-Dioxane-d8 (Surr)	63		27 - 120				11/19/19 08:01	11/20/19 08:43		1	
Lab Sample ID: LCS 440-580937/2-A				Client Sample ID: Lab Control Sample							
Matrix: Water				Prep Type: Total/NA							
Analysis Batch: 581174				Prep Batch: 580937							
Analyte	LCS Spike Added	LCS Result	LCS Qualifier	LCS Unit	D	%Rec	%Rec.				
1,4-Dioxane	2.00	1.45		ug/L		73	36 - 120				
Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits								
1,4-Dioxane-d8 (Surr)	69		27 - 120								

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Method: 8270C SIM - 1,4 Dioxane by SIM (Continued)

**Lab Sample ID:** LCSD 440-580937/3-A

**Matrix:** Water

**Analysis Batch:** 581174

**Client Sample ID:** Lab Control Sample Dup

**Prep Type:** Total/NA

**Prep Batch:** 580937

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.00	1.38		ug/L		69	36 - 120	5	35
<hr/>									
<b>Surrogate</b>									
	LCSD %Recovery	LCSD Qualifier		Limits					
1,4-Dioxane-d8 (Surr)	66			27 - 120					

## Method: SM 2540D - Solids, Total Suspended (TSS)

**Lab Sample ID:** MB 440-580480/1

**Matrix:** Water

**Analysis Batch:** 580480

**Client Sample ID:** Method Blank

**Prep Type:** Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	mg/L			11/15/19 17:14	1

**Lab Sample ID:** LCS 440-580480/2

**Matrix:** Water

**Analysis Batch:** 580480

**Client Sample ID:** Lab Control Sample

**Prep Type:** Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	%Rec. Limits
Total Suspended Solids	1000	1070		mg/L		107	85 - 115

**Lab Sample ID:** 440-254630-A-1 DU

**Matrix:** Water

**Analysis Batch:** 580480

**Client Sample ID:** Duplicate

**Prep Type:** Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	840		874		mg/L		3	10

## Method: SM 4500 H+ B - pH

**Lab Sample ID:** 440-254688-B-1 DU

**Matrix:** Water

**Analysis Batch:** 580797

**Client Sample ID:** Duplicate

**Prep Type:** Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	8.1		8.1		SU		0.1	2

## Method: SM 4500 S2 D - Sulfide, Total

**Lab Sample ID:** MB 440-581088/1-A

**Matrix:** Water

**Analysis Batch:** 581109

**Client Sample ID:** Method Blank

**Prep Type:** Dissolved

**Prep Batch:** 581088

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Dissolved	ND		0.050	mg/L		11/19/19 17:09	11/19/19 18:05	1

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Method: SM 4500 S2 D - Sulfide, Total (Continued)

**Lab Sample ID: LCS 440-581088/2-A**

**Matrix: Water**

**Analysis Batch: 581109**

**Client Sample ID: Lab Control Sample**

**Prep Type: Dissolved**

**Prep Batch: 581088**

**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
Sulfide, Dissolved	0.500	0.480		mg/L	96	80 - 120	

**Lab Sample ID: 440-254649-2 MS**

**Matrix: Water**

**Analysis Batch: 581109**

**Client Sample ID: GRAB\_20191115**

**Prep Type: Dissolved**

**Prep Batch: 581088**

**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec.	Limits
Sulfide, Dissolved	ND	HF	0.500	0.506	HF	mg/L	101	70 - 130	

**Lab Sample ID: 440-254649-2 MSD**

**Matrix: Water**

**Analysis Batch: 581109**

**Client Sample ID: GRAB\_20191115**

**Prep Type: Dissolved**

**Prep Batch: 581088**

**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	Limit
Sulfide, Dissolved	ND	HF	0.500	0.466	HF	mg/L	93	70 - 130	8	30

## Method: SM 5220D - COD

**Lab Sample ID: MB 440-581224/3**

**Matrix: Water**

**Analysis Batch: 581224**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	mg/L			11/20/19 10:18	1

**Lab Sample ID: LCS 440-581224/4**

**Matrix: Water**

**Analysis Batch: 581224**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
Chemical Oxygen Demand	200	205		mg/L	102	90 - 110	

**Lab Sample ID: 720-96027-F-2 MS**

**Matrix: Water**

**Analysis Batch: 581224**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec.	Limits
Chemical Oxygen Demand	ND		200	208		mg/L	97	70 - 120	

**Lab Sample ID: 720-96027-F-2 MSD**

**Matrix: Water**

**Analysis Batch: 581224**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	Limit
Chemical Oxygen Demand	ND		200	212		mg/L	99	70 - 120	2	15

# QC Association Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## GC/MS VOA

### Analysis Batch: 580924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	8260B	
MB 440-580924/4	Method Blank	Total/NA	Water	8260B	
LCS 440-580924/1002	Lab Control Sample	Total/NA	Water	8260B	
440-254703-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-254703-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 581077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	8260B	
MB 440-581077/4	Method Blank	Total/NA	Water	8260B	
LCS 440-581077/1002	Lab Control Sample	Total/NA	Water	8260B	
LCS 440-581077/1003	Lab Control Sample	Total/NA	Water	8260B	
440-254876-E-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-254876-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 580937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	3520C	
MB 440-580937/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-580937/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-580937/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 581174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	8270C SIM	580937
MB 440-580937/1-A	Method Blank	Total/NA	Water	8270C SIM	580937
LCS 440-580937/2-A	Lab Control Sample	Total/NA	Water	8270C SIM	580937
LCSD 440-580937/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM	580937

### Prep Batch: 581183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	3520C	
MB 440-581183/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-581183/2-A	Lab Control Sample	Total/NA	Water	3520C	
550-133382-D-11-A MS	Matrix Spike	Total/NA	Water	3520C	
550-133382-D-11-B MSD	Matrix Spike Duplicate	Total/NA	Water	3520C	

### Analysis Batch: 581738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	8270C	581183
MB 440-581183/1-A	Method Blank	Total/NA	Water	8270C	581183
LCS 440-581183/2-A	Lab Control Sample	Total/NA	Water	8270C	581183
550-133382-D-11-A MS	Matrix Spike	Total/NA	Water	8270C	581183
550-133382-D-11-B MSD	Matrix Spike Duplicate	Total/NA	Water	8270C	581183

## General Chemistry

### Analysis Batch: 580480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-1	COMPOSITE_20191115	Total/NA	Water	SM 2540D	

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# QC Association Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## General Chemistry (Continued)

### Analysis Batch: 580480 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-580480/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 440-580480/2	Lab Control Sample	Total/NA	Water	SM 2540D	
440-254630-A-1 DU	Duplicate	Total/NA	Water	SM 2540D	

### Analysis Batch: 580797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	SM 4500 H+ B	
440-254688-B-1 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

### Prep Batch: 581088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Dissolved	Water	SM 4500 S2 B	
MB 440-581088/1-A	Method Blank	Dissolved	Water	SM 4500 S2 B	
LCS 440-581088/2-A	Lab Control Sample	Dissolved	Water	SM 4500 S2 B	
440-254649-2 MS	GRAB_20191115	Dissolved	Water	SM 4500 S2 B	
440-254649-2 MSD	GRAB_20191115	Dissolved	Water	SM 4500 S2 B	

### Analysis Batch: 581109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Dissolved	Water	SM 4500 S2 D	581088
MB 440-581088/1-A	Method Blank	Dissolved	Water	SM 4500 S2 D	581088
LCS 440-581088/2-A	Lab Control Sample	Dissolved	Water	SM 4500 S2 D	581088
440-254649-2 MS	GRAB_20191115	Dissolved	Water	SM 4500 S2 D	581088
440-254649-2 MSD	GRAB_20191115	Dissolved	Water	SM 4500 S2 D	581088

### Analysis Batch: 581224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-1	COMPOSITE_20191115	Total/NA	Water	SM 5220D	
MB 440-581224/3	Method Blank	Total/NA	Water	SM 5220D	
LCS 440-581224/4	Lab Control Sample	Total/NA	Water	SM 5220D	
720-96027-F-2 MS	Matrix Spike	Total/NA	Water	SM 5220D	
720-96027-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5220D	

## Field Service / Mobile Lab

### Analysis Batch: 580642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	Field Sampling	

# Definitions/Glossary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits

### GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.

### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

**Abbreviation** These commonly used abbreviations may or may not be present in this report.

□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Accreditation/Certification Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Laboratory: Eurofins TestAmerica, Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State Program	CA ELAP 2706	06-30-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260B		Water	Total Volatile Organic Compounds
8270C	3520C	Water	2-Methylphenol
8270C	3520C	Water	3-Methylphenol + 4-Methylphenol
8270C	3520C	Water	4-Chloroaniline
8270C	3520C	Water	Benzidine
8270C SIM	3520C	Water	1,4-Dioxane
Field Sampling		Water	Field pH
Field Sampling		Water	Field Temperature

**Falset, Rayas** Lab PM:  
Roberts, Danielle C.  
[E-mail](#)

Ver: 08/04/2016

## Login Sample Receipt Checklist

Client: Jacob & Hefner Associates P.C.

Job Number: 440-254649-1

SDG Number: Whittier, CA

**Login Number: 254649**

**List Source: Eurofins TestAmerica, Irvine**

**List Number: 1**

**Creator: Soderblom, Tim**

Question	Answer	Comment	
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True		1
The cooler's custody seal, if present, is intact.	N/A	Not present	2
Sample custody seals, if present, are intact.	N/A	Not Present	3
The cooler or samples do not appear to have been compromised or tampered with.	True		4
Samples were received on ice.	True		5
Cooler Temperature is acceptable.	True		6
Cooler Temperature is recorded.	True		7
COC is present.	True		8
COC is filled out in ink and legible.	True		9
COC is filled out with all pertinent information.	True		10
Is the Field Sampler's name present on COC?	True		11
There are no discrepancies between the containers received and the COC.	True		12
Samples are received within Holding Time (excluding tests with immediate HTs)	True		13
Sample containers have legible labels.	True		14
Containers are not broken or leaking.	True		15
Sample collection date/times are provided.	True		
Appropriate sample containers are used.	True		
Sample bottles are completely filled.	True		
Sample Preservation Verified.	N/A		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True		
Multiphasic samples are not present.	True		
Samples do not require splitting or compositing.	True		
Residual Chlorine Checked.	N/A		



Environment Testing  
TestAmerica

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## ANALYTICAL REPORT

Eurofins TestAmerica, Irvine  
17461 Derian Ave  
Suite 100  
Irvine, CA 92614-5817  
Tel: (949)261-1022

Laboratory Job ID: 440-256836-1

Laboratory Sample Delivery Group: Omega Chemical  
Client Project/Site: Omega Chemical - GWCS Monthly

For:

Jacob & Hefner Associates P.C.  
15375 Barranca Parkway, J-101  
Irvine, California 92618

Attn: Trent Henderson

Danielle Roberts

Authorized for release by:  
12/13/2019 12:13:26 PM

Danielle Roberts, Senior Project Manager  
(949)260-3249  
[danielle.roberts@testamericainc.com](mailto:danielle.roberts@testamericainc.com)

### LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## Sample Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
SDG: Omega Chemical

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-256836-1	OC_SP220B_EFF_120619	Water	12/06/19 09:33	12/09/19 17:06	
440-256836-2	OC_SP210_INF_120619	Water	12/06/19 09:38	12/09/19 17:06	
440-256836-3	OC_TB_120619	Water	12/06/19 09:00	12/09/19 17:06	

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# Case Narrative

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
SDG: Omega Chemical

## Job ID: 440-256836-1

Laboratory: Eurofins TestAmerica, Irvine

### Narrative

#### Job Narrative 440-256836-1

### Comments

No additional comments.

### Receipt

The samples were received on 12/9/2019 5:06 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0° C.

### GC/MS VOA

Method 8260B: The laboratory control sample (LCS) for analytical batch 440-584863 recovered outside control limits for the following analyte: Acetone. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Method 8260B: The continuing calibration verification (CCV) associated with batch 440-584863 recovered above the upper control limit for Acetone. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: OC\_SP210\_INF\_120619 (440-256836-2), OC\_TB\_120619 (440-256836-3) and (CCVIS 440-584863/2).

Method 8260B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following sample associated with analytical batch 440-585070 were outside control limits: (440-256779-D-16 MS) and (440-256779-D-16 MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### Organic Prep

Method 3520C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 8270C preparation batch 440-584899. LCS was performed in duplicate to provide precision of data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

## Detection Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
SDG: Omega Chemical

### **Client Sample ID: OC\_SP220B\_EFF\_120619**

### **Lab Sample ID: 440-256836-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	10		0.48	0.097	ug/L	1		8270C SIM	Total/NA

### **Client Sample ID: OC\_SP210\_INF\_120619**

### **Lab Sample ID: 440-256836-2**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichloro-1,2,2-trifluoroethane	160		20	2.0	ug/L	4		8260B	Total/NA
1,1-Dichloroethene	46		4.0	1.0	ug/L	4		8260B	Total/NA
1,2-Dichloroethane	3.6 J		4.0	1.0	ug/L	4		8260B	Total/NA
Chloroform	18		4.0	1.0	ug/L	4		8260B	Total/NA
Methylene Chloride	5.1 J		20	3.5	ug/L	4		8260B	Total/NA
Tetrachloroethene	320		4.0	1.0	ug/L	4		8260B	Total/NA
Trichloroethene	41		4.0	1.0	ug/L	4		8260B	Total/NA
Trichlorofluoromethane	26		4.0	1.0	ug/L	4		8260B	Total/NA

### **Client Sample ID: OC\_TB\_120619**

### **Lab Sample ID: 440-256836-3**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

**Client Sample ID: OC\_SP220B\_EFF\_120619**

**Lab Sample ID: 440-256836-1**

**Matrix: Water**

Date Collected: 12/06/19 09:33

Date Received: 12/09/19 17:06

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,1,1-Trichloroethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	0.50	ug/L			12/10/19 16:07	1
1,1,2-Trichloroethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,1-Dichloroethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,1-Dichloroethene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,1-Dichloropropene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,2,3-Trichlorobenzene	ND		1.0	0.40	ug/L			12/10/19 16:07	1
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/10/19 16:07	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/10/19 16:07	1
1,2,4-Trimethylbenzene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.50	ug/L			12/10/19 16:07	1
1,2-Dibromoethane (EDB)	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,2-Dichlorobenzene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,2-Dichloroethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,2-Dichloropropene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,3,5-Trimethylbenzene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,3-Dichlorobenzene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,3-Dichloropropane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
1,4-Dichlorobenzene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/10/19 16:07	1
2-Chlorotoluene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
4-Chlorotoluene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Benzene	ND		0.50	0.25	ug/L			12/10/19 16:07	1
Bromobenzene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Bromochloromethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Bromodichloromethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Bromoform	ND		1.0	0.40	ug/L			12/10/19 16:07	1
Bromomethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/10/19 16:07	1
Chlorobenzene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Chloroethane	ND		1.0	0.40	ug/L			12/10/19 16:07	1
Chloroform	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Chloromethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
cis-1,2-Dichloroethene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/10/19 16:07	1
Dibromochloromethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Dibromomethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/10/19 16:07	1
Ethylbenzene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Hexachlorobutadiene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Isopropyl alcohol	ND		250	180	ug/L			12/10/19 16:07	1
Isopropylbenzene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/10/19 16:07	1
Methylene Chloride	ND		5.0	0.88	ug/L			12/10/19 16:07	1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Naphthalene	ND		1.0	0.40	ug/L			12/10/19 16:07	1
n-Butylbenzene	ND		1.0	0.40	ug/L			12/10/19 16:07	1

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

**Client Sample ID: OC\_SP220B\_EFF\_120619**

**Lab Sample ID: 440-256836-1**

Matrix: Water

Date Collected: 12/06/19 09:33

Date Received: 12/09/19 17:06

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
o-Xylene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
p-Isopropyltoluene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
sec-Butylbenzene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Styrene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
tert-Butylbenzene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Tetrachloroethene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Toluene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
trans-1,2-Dichloroethene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/10/19 16:07	1
Trichloroethene	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Trichlorofluoromethane	ND		1.0	0.25	ug/L			12/10/19 16:07	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/10/19 16:07	1
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)		113		70 - 130				12/10/19 16:07	1
4-Bromofluorobenzene (Surr)		103		80 - 120				12/10/19 16:07	1
Dibromofluoromethane (Surr)		107		76 - 132				12/10/19 16:07	1
Toluene-d8 (Surr)		100		80 - 128				12/10/19 16:07	1

## Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	10	ug/L			12/10/19 23:51	1
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)		95		70 - 130				12/10/19 23:51	1
4-Bromofluorobenzene (Surr)		99		80 - 120				12/10/19 23:51	1
Dibromofluoromethane (Surr)		99		76 - 132				12/10/19 23:51	1
Toluene-d8 (Surr)		103		80 - 128				12/10/19 23:51	1

## Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	10		0.48	0.097	ug/L		12/10/19 08:58	12/11/19 13:14	1
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,4-Dioxane-d8 (Surr)		46		27 - 120				12/10/19 08:58	12/11/19 13:14

**Client Sample ID: OC\_SP210\_INF\_120619**

**Lab Sample ID: 440-256836-2**

Matrix: Water

Date Collected: 12/06/19 09:38

Date Received: 12/09/19 17:06

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
1,1,1-Trichloroethane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
1,1,2,2-Tetrachloroethane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
<b>1,1,2-Trichloro-1,2,2-trifluoroethane</b>	<b>160</b>		20	2.0	ug/L			12/10/19 16:35	4
1,1,2-Trichloroethane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
1,1-Dichloroethane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
<b>1,1-Dichloroethene</b>	<b>46</b>		4.0	1.0	ug/L			12/10/19 16:35	4

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

**Client Sample ID: OC\_SP210\_INF\_120619**

**Lab Sample ID: 440-256836-2**

**Matrix: Water**

Date Collected: 12/06/19 09:38

Date Received: 12/09/19 17:06

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
1,2,3-Trichlorobenzene	ND		4.0	1.6	ug/L			12/10/19 16:35	4
1,2,3-Trichloropropane	ND		4.0	1.6	ug/L			12/10/19 16:35	4
1,2,4-Trichlorobenzene	ND		4.0	1.6	ug/L			12/10/19 16:35	4
1,2,4-Trimethylbenzene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
1,2-Dibromo-3-Chloropropane	ND		20	2.0	ug/L			12/10/19 16:35	4
1,2-Dibromoethane (EDB)	ND		4.0	1.0	ug/L			12/10/19 16:35	4
1,2-Dichlorobenzene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
<b>1,2-Dichloroethane</b>	<b>3.6 J</b>		4.0	1.0	ug/L			12/10/19 16:35	4
1,2-Dichloropropane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
1,3,5-Trimethylbenzene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
1,3-Dichlorobenzene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
1,3-Dichloropropane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
1,4-Dichlorobenzene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
2,2-Dichloropropane	ND		4.0	1.6	ug/L			12/10/19 16:35	4
2-Chlorotoluene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
4-Chlorotoluene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
Acetone	ND *		40	40	ug/L			12/10/19 16:35	4
Benzene	ND		2.0	1.0	ug/L			12/10/19 16:35	4
Bromobenzene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
Bromochloromethane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
Bromodichloromethane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
Bromoform	ND		4.0	1.6	ug/L			12/10/19 16:35	4
Bromomethane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
Carbon tetrachloride	ND		2.0	1.0	ug/L			12/10/19 16:35	4
Chlorobenzene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
Chloroethane	ND		4.0	1.6	ug/L			12/10/19 16:35	4
<b>Chloroform</b>	<b>18</b>		4.0	1.0	ug/L			12/10/19 16:35	4
Chloromethane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
cis-1,2-Dichloroethene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
cis-1,3-Dichloropropene	ND		2.0	1.0	ug/L			12/10/19 16:35	4
Dibromochloromethane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
Dibromomethane	ND		4.0	1.0	ug/L			12/10/19 16:35	4
Dichlorodifluoromethane	ND		4.0	1.6	ug/L			12/10/19 16:35	4
Ethylbenzene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
Hexachlorobutadiene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
Isopropyl alcohol	ND		1000	700	ug/L			12/10/19 16:35	4
Isopropylbenzene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
m,p-Xylene	ND		4.0	2.0	ug/L			12/10/19 16:35	4
<b>Methylene Chloride</b>	<b>5.1 J</b>		20	3.5	ug/L			12/10/19 16:35	4
Methyl-t-Butyl Ether (MTBE)	ND		4.0	1.0	ug/L			12/10/19 16:35	4
Naphthalene	ND		4.0	1.6	ug/L			12/10/19 16:35	4
n-Butylbenzene	ND		4.0	1.6	ug/L			12/10/19 16:35	4
N-Propylbenzene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
o-Xylene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
p-Isopropyltoluene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
sec-Butylbenzene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
Styrene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
tert-Butylbenzene	ND		4.0	1.0	ug/L			12/10/19 16:35	4

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

**Client Sample ID: OC\_SP210\_INF\_120619**

**Lab Sample ID: 440-256836-2**

Matrix: Water

Date Collected: 12/06/19 09:38

Date Received: 12/09/19 17:06

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	320		4.0	1.0	ug/L			12/10/19 16:35	4
Toluene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
trans-1,2-Dichloroethene	ND		4.0	1.0	ug/L			12/10/19 16:35	4
trans-1,3-Dichloropropene	ND		2.0	1.0	ug/L			12/10/19 16:35	4
Trichloroethene	41		4.0	1.0	ug/L			12/10/19 16:35	4
Trichlorofluoromethane	26		4.0	1.0	ug/L			12/10/19 16:35	4
Vinyl chloride	ND		2.0	1.0	ug/L			12/10/19 16:35	4
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	116			70 - 130				12/10/19 16:35	4
4-Bromofluorobenzene (Surr)	104			80 - 120				12/10/19 16:35	4
Dibromofluoromethane (Surr)	108			76 - 132				12/10/19 16:35	4
Toluene-d8 (Surr)	97			80 - 128				12/10/19 16:35	4

**Client Sample ID: OC\_TB\_120619**

**Lab Sample ID: 440-256836-3**

Matrix: Water

Date Collected: 12/06/19 09:00

Date Received: 12/09/19 17:06

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,1,1-Trichloroethane	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	0.50	ug/L			12/10/19 17:04	1
1,1,2-Trichloroethane	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,1-Dichloroethane	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,1-Dichloroethene	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,1-Dichloropropene	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,2,3-Trichlorobenzene	ND		1.0	0.40	ug/L			12/10/19 17:04	1
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/10/19 17:04	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/10/19 17:04	1
1,2,4-Trimethylbenzene	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.50	ug/L			12/10/19 17:04	1
1,2-Dibromoethane (EDB)	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,2-Dichlorobenzene	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,2-Dichloroethane	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,2-Dichloropropane	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,3,5-Trimethylbenzene	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,3-Dichlorobenzene	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,3-Dichloropropane	ND		1.0	0.25	ug/L			12/10/19 17:04	1
1,4-Dichlorobenzene	ND		1.0	0.25	ug/L			12/10/19 17:04	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/10/19 17:04	1
2-Chlorotoluene	ND		1.0	0.25	ug/L			12/10/19 17:04	1
4-Chlorotoluene	ND		1.0	0.25	ug/L			12/10/19 17:04	1
Acetone	ND *		10	10	ug/L			12/10/19 17:04	1
Benzene	ND		0.50	0.25	ug/L			12/10/19 17:04	1
Bromobenzene	ND		1.0	0.25	ug/L			12/10/19 17:04	1
Bromochloromethane	ND		1.0	0.25	ug/L			12/10/19 17:04	1
Bromodichloromethane	ND		1.0	0.25	ug/L			12/10/19 17:04	1
Bromoform	ND		1.0	0.40	ug/L			12/10/19 17:04	1

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

**Client Sample ID: OC\_TB\_120619**

Date Collected: 12/06/19 09:00

Date Received: 12/09/19 17:06

**Lab Sample ID: 440-256836-3**

Matrix: Water

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Carbon tetrachloride	ND		0.50	0.25	ug/L		12/10/19 17:04		1
Chlorobenzene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Chloroethane	ND		1.0	0.40	ug/L		12/10/19 17:04		1
Chloroform	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Chloromethane	ND		1.0	0.25	ug/L		12/10/19 17:04		1
cis-1,2-Dichloroethene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L		12/10/19 17:04		1
Dibromochloromethane	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Dibromomethane	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L		12/10/19 17:04		1
Ethylbenzene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Hexachlorobutadiene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Isopropyl alcohol	ND		250	180	ug/L		12/10/19 17:04		1
Isopropylbenzene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
m,p-Xylene	ND		1.0	0.50	ug/L		12/10/19 17:04		1
Methylene Chloride	ND		5.0	0.88	ug/L		12/10/19 17:04		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Naphthalene	ND		1.0	0.40	ug/L		12/10/19 17:04		1
n-Butylbenzene	ND		1.0	0.40	ug/L		12/10/19 17:04		1
N-Propylbenzene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
o-Xylene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
p-Isopropyltoluene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
sec-Butylbenzene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Styrene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
tert-Butylbenzene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Tetrachloroethene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Toluene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
trans-1,2-Dichloroethene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L		12/10/19 17:04		1
Trichloroethene	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Trichlorofluoromethane	ND		1.0	0.25	ug/L		12/10/19 17:04		1
Vinyl chloride	ND		0.50	0.25	ug/L		12/10/19 17:04		1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>	
1,2-Dichloroethane-d4 (Surr)	112		70 - 130				12/10/19 17:04		1
4-Bromofluorobenzene (Surr)	98		80 - 120				12/10/19 17:04		1
Dibromofluoromethane (Surr)	107		76 - 132				12/10/19 17:04		1
Toluene-d8 (Surr)	100		80 - 128				12/10/19 17:04		1

Eurofins TestAmerica, Irvine

# Surrogate Summary

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (70-130)	BFB (80-120)	DBFM (76-132)	TOL (80-128)
440-256779-D-16 MS	Matrix Spike	93	109	96	99
440-256779-D-16 MSD	Matrix Spike Duplicate	90	106	97	101
440-256836-1	OC_SP220B_EFF_120619	113	103	107	100
440-256836-1 - RA	OC_SP220B_EFF_120619	95	99	99	103
440-256836-2	OC_SP210_INF_120619	116	104	108	97
440-256836-3	OC_TB_120619	112	98	107	100
440-256855-C-1 MS	Matrix Spike	110	101	109	94
440-256855-C-1 MSD	Matrix Spike Duplicate	111	98	107	96
LCS 440-584863/1002	Lab Control Sample	103	101	104	93
LCS 440-584863/1003	Lab Control Sample	109	93	105	101
LCS 440-585070/1002	Lab Control Sample	91	97	101	101
MB 440-584863/4	Method Blank	115	102	107	100
MB 440-585070/4	Method Blank	95	96	99	100

### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)  
 BFB = 4-Bromofluorobenzene (Surr)  
 DBFM = Dibromofluoromethane (Surr)  
 TOL = Toluene-d8 (Surr)

## Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DXE (27-120)		
440-256836-1	OC_SP220B_EFF_120619	46		
LCS 440-584899/3-A	Lab Control Sample	64		
LCSD 440-584899/4-A	Lab Control Sample Dup	66		
MB 440-584899/1-A	Method Blank	69		

### Surrogate Legend

DXE = 1,4-Dioxane-d8 (Surr)

## Method Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
SDG: Omega Chemical

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	TAL IRV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV

### Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# Lab Chronicle

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

**Client Sample ID: OC\_SP220B\_EFF\_120619**

**Lab Sample ID: 440-256836-1**

**Matrix: Water**

Date Collected: 12/06/19 09:33

Date Received: 12/09/19 17:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	RA	1	10 mL	10 mL	585070	12/10/19 23:51	GMA	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	584863	12/10/19 16:07	AI	TAL IRV
Total/NA	Prep	3520C			1035 mL	1.0 mL	584899	12/10/19 08:58	NAM	TAL IRV
Total/NA	Analysis	8270C SIM		1			585262	12/11/19 13:14	YCL	TAL IRV

**Client Sample ID: OC\_SP210\_INF\_120619**

**Lab Sample ID: 440-256836-2**

**Matrix: Water**

Date Collected: 12/06/19 09:38

Date Received: 12/09/19 17:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		4	10 mL	10 mL	584863	12/10/19 16:35	AI	TAL IRV

**Client Sample ID: OC\_TB\_120619**

**Lab Sample ID: 440-256836-3**

**Matrix: Water**

Date Collected: 12/06/19 09:00

Date Received: 12/09/19 17:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	584863	12/10/19 17:04	AI	TAL IRV

**Laboratory References:**

TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-584863/4**

**Matrix: Water**

**Analysis Batch: 584863**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,1,1-Trichloroethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	0.50	ug/L			12/10/19 08:31	1
1,1,2-Trichloroethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,1-Dichloroethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,1-Dichloroethene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,1-Dichloropropene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,2,3-Trichlorobenzene	ND		1.0	0.40	ug/L			12/10/19 08:31	1
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/10/19 08:31	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/10/19 08:31	1
1,2,4-Trimethylbenzene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.50	ug/L			12/10/19 08:31	1
1,2-Dibromoethane (EDB)	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,2-Dichlorobenzene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,2-Dichloroethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,2-Dichloropropane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,3,5-Trimethylbenzene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,3-Dichlorobenzene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,3-Dichloropropane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
1,4-Dichlorobenzene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/10/19 08:31	1
2-Chlorotoluene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
4-Chlorotoluene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
Acetone	ND		10	10	ug/L			12/10/19 08:31	1
Benzene	ND		0.50	0.25	ug/L			12/10/19 08:31	1
Bromobenzene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
Bromochloromethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
Bromodichloromethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
Bromoform	ND		1.0	0.40	ug/L			12/10/19 08:31	1
Bromomethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/10/19 08:31	1
Chlorobenzene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
Chloroethane	ND		1.0	0.40	ug/L			12/10/19 08:31	1
Chloroform	ND		1.0	0.25	ug/L			12/10/19 08:31	1
Chloromethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
cis-1,2-Dichloroethene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/10/19 08:31	1
Dibromochloromethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
Dibromomethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/10/19 08:31	1
Ethylbenzene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
Hexachlorobutadiene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
Isopropyl alcohol	ND		250	180	ug/L			12/10/19 08:31	1
Isopropylbenzene	ND		1.0	0.25	ug/L			12/10/19 08:31	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/10/19 08:31	1
Methylene Chloride	ND		5.0	0.88	ug/L			12/10/19 08:31	1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	0.25	ug/L			12/10/19 08:31	1

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** MB 440-584863/4

**Matrix:** Water

**Analysis Batch:** 584863

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
	Result	Qualifier								
Naphthalene	ND		1.0	0.40	ug/L			12/10/19 08:31	1	
n-Butylbenzene	ND		1.0	0.40	ug/L			12/10/19 08:31	1	
N-Propylbenzene	ND		1.0	0.25	ug/L			12/10/19 08:31	1	
o-Xylene	ND		1.0	0.25	ug/L			12/10/19 08:31	1	
p-Isopropyltoluene	ND		1.0	0.25	ug/L			12/10/19 08:31	1	
sec-Butylbenzene	ND		1.0	0.25	ug/L			12/10/19 08:31	1	
Styrene	ND		1.0	0.25	ug/L			12/10/19 08:31	1	
tert-Butylbenzene	ND		1.0	0.25	ug/L			12/10/19 08:31	1	
Tetrachloroethene	ND		1.0	0.25	ug/L			12/10/19 08:31	1	
Toluene	ND		1.0	0.25	ug/L			12/10/19 08:31	1	
trans-1,2-Dichloroethene	ND		1.0	0.25	ug/L			12/10/19 08:31	1	
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/10/19 08:31	1	
Trichloroethene	ND		1.0	0.25	ug/L			12/10/19 08:31	1	
Trichlorofluoromethane	ND		1.0	0.25	ug/L			12/10/19 08:31	1	
Vinyl chloride	ND		0.50	0.25	ug/L			12/10/19 08:31	1	
<b>MB</b>		<b>MB</b>								
Surrogate	%Recovery	Qualifier	<b>Limits</b>				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	115		70 - 130					12/10/19 08:31	1	
4-Bromofluorobenzene (Surr)	102		80 - 120					12/10/19 08:31	1	
Dibromofluoromethane (Surr)	107		76 - 132					12/10/19 08:31	1	
Toluene-d8 (Surr)	100		80 - 128					12/10/19 08:31	1	

**Lab Sample ID:** LCS 440-584863/1002

**Matrix:** Water

**Analysis Batch:** 584863

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	LC S	LC S	Unit	D	%Rec	Limits	%Rec.
		Result	Qualifier					
1,1,1,2-Tetrachloroethane	25.0	25.8		ug/L		103	60 - 141	
1,1,1-Trichloroethane	25.0	29.3		ug/L		117	70 - 130	
1,1,2,2-Tetrachloroethane	25.0	24.2		ug/L		97	63 - 130	
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	28.9		ug/L		116	60 - 140	
1,1,2-Trichloroethane	25.0	25.2		ug/L		101	70 - 130	
1,1-Dichloroethane	25.0	27.3		ug/L		109	64 - 130	
1,1-Dichloroethene	25.0	26.1		ug/L		105	70 - 130	
1,1-Dichloropropene	25.0	26.9		ug/L		108	70 - 130	
1,2,3-Trichlorobenzene	25.0	20.4		ug/L		82	60 - 140	
1,2,3-Trichloropropane	25.0	25.1		ug/L		100	63 - 130	
1,2,4-Trichlorobenzene	25.0	22.6		ug/L		90	60 - 140	
1,2,4-Trimethylbenzene	25.0	26.1		ug/L		104	70 - 135	
1,2-Dibromo-3-Chloropropane	25.0	23.4		ug/L		94	52 - 140	
1,2-Dibromoethane (EDB)	25.0	25.6		ug/L		103	70 - 130	
1,2-Dichlorobenzene	25.0	25.8		ug/L		103	70 - 130	
1,2-Dichloroethane	25.0	29.8		ug/L		119	57 - 138	
1,2-Dichloropropane	25.0	26.5		ug/L		106	67 - 130	
1,3,5-Trimethylbenzene	25.0	26.8		ug/L		107	70 - 136	
1,3-Dichlorobenzene	25.0	25.6		ug/L		102	70 - 130	
1,3-Dichloropropane	25.0	25.0		ug/L		100	70 - 130	
1,4-Dichlorobenzene	25.0	25.2		ug/L		101	70 - 130	

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-584863/1002**

**Matrix: Water**

**Analysis Batch: 584863**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,2-Dichloropropane	25.0	30.9		ug/L	124	68 - 141	
2-Chlorotoluene	25.0	25.9		ug/L	104	70 - 130	
4-Chlorotoluene	25.0	26.5		ug/L	106	70 - 130	
Acetone	125	190	*	ug/L	152	10 - 150	
Benzene	25.0	25.4		ug/L	102	68 - 130	
Bromobenzene	25.0	25.5		ug/L	102	70 - 130	
Bromochloromethane	25.0	28.2		ug/L	113	70 - 130	
Bromodichloromethane	25.0	30.4		ug/L	122	70 - 132	
Bromoform	25.0	28.5		ug/L	114	60 - 148	
Bromomethane	25.0	24.1		ug/L	96	64 - 139	
Carbon tetrachloride	25.0	30.7		ug/L	123	60 - 150	
Chlorobenzene	25.0	25.2		ug/L	101	70 - 130	
Chloroethane	25.0	25.0		ug/L	100	64 - 135	
Chloroform	25.0	26.9		ug/L	108	70 - 130	
Chloromethane	25.0	25.5		ug/L	102	47 - 140	
cis-1,2-Dichloroethene	25.0	25.2		ug/L	101	70 - 133	
cis-1,3-Dichloropropene	25.0	25.2		ug/L	101	70 - 133	
Dibromochloromethane	25.0	29.7		ug/L	119	69 - 145	
Dibromomethane	25.0	28.1		ug/L	112	70 - 130	
Dichlorodifluoromethane	25.0	28.8		ug/L	115	29 - 150	
Ethylbenzene	25.0	25.4		ug/L	101	70 - 130	
Hexachlorobutadiene	25.0	24.8		ug/L	99	10 - 150	
Isopropylbenzene	25.0	25.4		ug/L	102	70 - 136	
m,p-Xylene	25.0	25.2		ug/L	101	70 - 130	
Methylene Chloride	25.0	26.4		ug/L	106	52 - 130	
Methyl-t-Butyl Ether (MTBE)	25.0	25.1		ug/L	100	63 - 131	
Naphthalene	25.0	21.3		ug/L	85	60 - 140	
n-Butylbenzene	25.0	25.4		ug/L	102	65 - 150	
N-Propylbenzene	25.0	26.1		ug/L	104	67 - 139	
o-Xylene	25.0	25.3		ug/L	101	70 - 130	
p-Isopropyltoluene	25.0	25.9		ug/L	104	70 - 132	
sec-Butylbenzene	25.0	25.9		ug/L	104	70 - 138	
Styrene	25.0	25.8		ug/L	103	70 - 134	
tert-Butylbenzene	25.0	25.2		ug/L	101	70 - 130	
Tetrachloroethene	25.0	26.5		ug/L	106	70 - 130	
Toluene	25.0	24.4		ug/L	98	70 - 130	
trans-1,2-Dichloroethene	25.0	25.7		ug/L	103	70 - 130	
trans-1,3-Dichloropropene	25.0	25.7		ug/L	103	70 - 132	
Trichloroethene	25.0	28.3		ug/L	113	70 - 130	
Trichlorofluoromethane	25.0	30.0		ug/L	120	60 - 150	
Vinyl chloride	25.0	23.8		ug/L	95	59 - 133	

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 130
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	104		76 - 132
Toluene-d8 (Surr)	93		80 - 128

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-584863/1003**

**Matrix: Water**

**Analysis Batch: 584863**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Isopropyl alcohol	250	291		ug/L	116		49 - 142

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	109		70 - 130
4-Bromofluorobenzene (Surr)	93		80 - 120
Dibromofluoromethane (Surr)	105		76 - 132
Toluene-d8 (Surr)	101		80 - 128

**Lab Sample ID: 440-256855-C-1 MS**

**Matrix: Water**

**Analysis Batch: 584863**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		2500	2650		ug/L	106	60 - 149	
1,1,1-Trichloroethane	ND		2500	3080		ug/L	123	70 - 130	
1,1,2,2-Tetrachloroethane	ND		2500	2410		ug/L	96	63 - 130	
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2500	2850		ug/L	114	60 - 140	
1,1,2-Trichloroethane	ND		2500	2560		ug/L	102	70 - 130	
1,1-Dichloroethane	ND		2500	2850		ug/L	114	65 - 130	
1,1-Dichloroethene	ND		2500	2540		ug/L	102	70 - 130	
1,1-Dichloropropene	ND		2500	2880		ug/L	115	64 - 130	
1,2,3-Trichlorobenzene	ND		2500	2210		ug/L	88	60 - 140	
1,2,3-Trichloropropane	ND		2500	2410		ug/L	97	60 - 130	
1,2,4-Trichlorobenzene	ND		2500	2370		ug/L	95	60 - 140	
1,2,4-Trimethylbenzene	ND		2500	2680		ug/L	107	70 - 130	
1,2-Dibromo-3-Chloropropane	ND		2500	2440		ug/L	98	48 - 140	
1,2-Dibromoethane (EDB)	ND		2500	2560		ug/L	102	70 - 131	
1,2-Dichlorobenzene	ND		2500	2670		ug/L	107	70 - 130	
1,2-Dichloroethane	ND		2500	2910		ug/L	116	56 - 146	
1,2-Dichloropropane	ND		2500	2800		ug/L	112	69 - 130	
1,3,5-Trimethylbenzene	ND		2500	2630		ug/L	105	70 - 130	
1,3-Dichlorobenzene	ND		2500	2630		ug/L	105	70 - 130	
1,3-Dichloropropane	ND		2500	2510		ug/L	100	70 - 130	
1,4-Dichlorobenzene	ND		2500	2620		ug/L	105	70 - 130	
2,2-Dichloropropane	ND F1		2500	3530	F1	ug/L	141	69 - 138	
2-Chlorotoluene	ND		2500	2610		ug/L	104	70 - 130	
4-Chlorotoluene	ND		2500	2600		ug/L	104	70 - 130	
Acetone	ND *		12500	18200		ug/L	145	10 - 150	
Benzene	ND		2500	2640		ug/L	106	66 - 130	
Bromobenzene	ND		2500	2460		ug/L	98	70 - 130	
Bromochloromethane	ND		2500	2800		ug/L	112	70 - 130	
Bromodichloromethane	ND		2500	3090		ug/L	124	70 - 138	
Bromoform	ND		2500	2820		ug/L	113	59 - 150	
Bromomethane	ND		2500	2230		ug/L	89	62 - 131	
Carbon tetrachloride	ND		2500	3180		ug/L	127	60 - 150	
Chlorobenzene	7300		2500	9740		ug/L	96	70 - 130	
Chloroethane	ND		2500	2420		ug/L	97	68 - 130	

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-256855-C-1 MS**

**Matrix: Water**

**Analysis Batch: 584863**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits		
Chloroform	100	J	2500	2860		ug/L		110	70 - 130		
Chloromethane	ND		2500	2210		ug/L		88	39 - 144		
cis-1,2-Dichloroethene	ND		2500	2550		ug/L		102	70 - 130		
cis-1,3-Dichloropropene	ND		2500	2580		ug/L		103	70 - 133		
Dibromochloromethane	ND		2500	2870		ug/L		115	70 - 148		
Dibromomethane	ND		2500	2810		ug/L		112	70 - 130		
Dichlorodifluoromethane	ND		2500	2400		ug/L		96	25 - 142		
Ethylbenzene	ND		2500	2650		ug/L		106	70 - 130		
Hexachlorobutadiene	ND		2500	2540		ug/L		102	10 - 150		
Isopropyl alcohol	ND		62500	79400		ug/L		127	46 - 142		
Isopropylbenzene	ND		2500	2640		ug/L		106	70 - 132		
m,p-Xylene	ND		2500	2560		ug/L		103	70 - 133		
Methylene Chloride	ND		2500	2960		ug/L		119	52 - 130		
Methyl-t-Butyl Ether (MTBE)	ND		2500	2450		ug/L		98	70 - 130		
Naphthalene	ND		2500	2020		ug/L		81	60 - 140		
n-Butylbenzene	ND		2500	2680		ug/L		107	61 - 149		
N-Propylbenzene	ND		2500	2630		ug/L		105	66 - 135		
o-Xylene	ND		2500	2610		ug/L		105	70 - 133		
p-Isopropyltoluene	ND		2500	2730		ug/L		109	70 - 130		
sec-Butylbenzene	ND		2500	2660		ug/L		106	67 - 134		
Styrene	ND		2500	2520		ug/L		101	29 - 150		
tert-Butylbenzene	ND		2500	2660		ug/L		106	70 - 130		
Tetrachloroethene	ND		2500	2880		ug/L		115	70 - 137		
Toluene	ND		2500	2530		ug/L		101	70 - 130		
trans-1,2-Dichloroethene	ND		2500	2730		ug/L		109	70 - 130		
trans-1,3-Dichloropropene	ND		2500	2570		ug/L		103	70 - 138		
Trichloroethene	ND		2500	2990		ug/L		120	70 - 130		
Trichlorofluoromethane	ND		2500	2930		ug/L		117	60 - 150		
Vinyl chloride	ND		2500	2270		ug/L		91	50 - 137		
<b>Surrogate</b>	<b>MS %Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	110		70 - 130								
4-Bromofluorobenzene (Surr)	101		80 - 120								
Dibromofluoromethane (Surr)	109		76 - 132								
Toluene-d8 (Surr)	94		80 - 128								

**Lab Sample ID: 440-256855-C-1 MSD**

**Matrix: Water**

**Analysis Batch: 584863**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1,2-Tetrachloroethane	ND		2500	2630		ug/L		105	60 - 149	1	20
1,1,1-Trichloroethane	ND		2500	2940		ug/L		118	70 - 130	4	20
1,1,2,2-Tetrachloroethane	ND		2500	2400		ug/L		96	63 - 130	0	30
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2500	2800		ug/L		112	60 - 140	2	20
1,1,2-Trichloroethane	ND		2500	2460		ug/L		98	70 - 130	4	25
1,1-Dichloroethane	ND		2500	2680		ug/L		107	65 - 130	6	20
1,1-Dichloroethene	ND		2500	2410		ug/L		96	70 - 130	5	20

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-256855-C-1 MSD**

**Matrix: Water**

**Analysis Batch: 584863**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	Limits	RPD	RPD Limit
1,1-Dichloropropene	ND		2500	2740		ug/L		110	64 - 130	5	20
1,2,3-Trichlorobenzene	ND		2500	2160		ug/L		86	60 - 140	2	20
1,2,3-Trichloropropane	ND		2500	2290		ug/L		92	60 - 130	5	30
1,2,4-Trichlorobenzene	ND		2500	2430		ug/L		97	60 - 140	2	20
1,2,4-Trimethylbenzene	ND		2500	2510		ug/L		101	70 - 130	7	25
1,2-Dibromo-3-Chloropropane	ND		2500	2410		ug/L		97	48 - 140	1	30
1,2-Dibromoethane (EDB)	ND		2500	2540		ug/L		101	70 - 131	1	25
1,2-Dichlorobenzene	ND		2500	2520		ug/L		101	70 - 130	6	20
1,2-Dichloroethane	ND		2500	2850		ug/L		114	56 - 146	2	20
1,2-Dichloropropane	ND		2500	2640		ug/L		106	69 - 130	6	20
1,3,5-Trimethylbenzene	ND		2500	2420		ug/L		97	70 - 130	8	20
1,3-Dichlorobenzene	ND		2500	2350		ug/L		94	70 - 130	11	20
1,3-Dichloropropane	ND		2500	2480		ug/L		99	70 - 130	1	25
1,4-Dichlorobenzene	ND		2500	2460		ug/L		99	70 - 130	6	20
2,2-Dichloropropane	ND F1		2500	2990		ug/L		120	69 - 138	16	25
2-Chlorotoluene	ND		2500	2410		ug/L		97	70 - 130	8	20
4-Chlorotoluene	ND		2500	2390		ug/L		96	70 - 130	9	20
Acetone	ND *		12500	18300		ug/L		146	10 - 150	1	35
Benzene	ND		2500	2470		ug/L		99	66 - 130	7	20
Bromobenzene	ND		2500	2340		ug/L		93	70 - 130	5	20
Bromochloromethane	ND		2500	2710		ug/L		108	70 - 130	3	25
Bromodichloromethane	ND		2500	2930		ug/L		117	70 - 138	5	20
Bromoform	ND		2500	2890		ug/L		116	59 - 150	3	25
Bromomethane	ND		2500	2230		ug/L		89	62 - 131	0	25
Carbon tetrachloride	ND		2500	2900		ug/L		116	60 - 150	9	25
Chlorobenzene	7300		2500	9220		ug/L		75	70 - 130	6	20
Chloroethane	ND		2500	2190		ug/L		87	68 - 130	10	25
Chloroform	100 J		2500	2670		ug/L		103	70 - 130	7	20
Chloromethane	ND		2500	2110		ug/L		84	39 - 144	5	25
cis-1,2-Dichloroethene	ND		2500	2520		ug/L		101	70 - 130	1	20
cis-1,3-Dichloropropene	ND		2500	2480		ug/L		99	70 - 133	4	20
Dibromochloromethane	ND		2500	3030		ug/L		121	70 - 148	6	25
Dibromomethane	ND		2500	2780		ug/L		111	70 - 130	1	25
Dichlorodifluoromethane	ND		2500	2300		ug/L		92	25 - 142	4	30
Ethylbenzene	ND		2500	2560		ug/L		102	70 - 130	4	20
Hexachlorobutadiene	ND		2500	2410		ug/L		96	10 - 150	5	20
Isopropyl alcohol	ND		62500	62200 J		ug/L		100	46 - 142	24	40
Isopropylbenzene	ND		2500	2520		ug/L		101	70 - 132	4	20
m,p-Xylene	ND		2500	2500		ug/L		100	70 - 133	2	25
Methylene Chloride	ND		2500	2810		ug/L		113	52 - 130	5	20
Methyl-t-Butyl Ether (MTBE)	ND		2500	2490		ug/L		100	70 - 130	1	25
Naphthalene	ND		2500	2060		ug/L		83	60 - 140	2	30
n-Butylbenzene	ND		2500	2390		ug/L		95	61 - 149	11	20
N-Propylbenzene	ND		2500	2350		ug/L		94	66 - 135	11	20
o-Xylene	ND		2500	2520		ug/L		101	70 - 133	4	20
p-Isopropyltoluene	ND		2500	2500		ug/L		100	70 - 130	9	20
sec-Butylbenzene	ND		2500	2390		ug/L		96	67 - 134	11	20
Styrene	ND		2500	2470		ug/L		99	29 - 150	2	35
tert-Butylbenzene	ND		2500	2450		ug/L		98	70 - 130	8	20

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-256855-C-1 MSD**

**Matrix: Water**

**Analysis Batch: 584863**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	RPD Limit
Tetrachloroethene	ND		2500	2770		ug/L	111	70 - 137	4	20
Toluene	ND		2500	2530		ug/L	101	70 - 130	0	20
trans-1,2-Dichloroethene	ND		2500	2350		ug/L	94	70 - 130	15	20
trans-1,3-Dichloropropene	ND		2500	2630		ug/L	105	70 - 138	2	25
Trichloroethene	ND		2500	2810		ug/L	112	70 - 130	6	20
Trichlorofluoromethane	ND		2500	2670		ug/L	107	60 - 150	9	25
Vinyl chloride	ND		2500	2070		ug/L	83	50 - 137	9	30
<b>Surrogate</b>										
	<b>%Recovery</b>	<b>Qualifier</b>		<b>Limits</b>						
1,2-Dichloroethane-d4 (Surr)	111			70 - 130						
4-Bromofluorobenzene (Surr)	98			80 - 120						
Dibromofluoromethane (Surr)	107			76 - 132						
Toluene-d8 (Surr)	96			80 - 128						

**Lab Sample ID: MB 440-585070/4**

**Matrix: Water**

**Analysis Batch: 585070**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	10	ug/L			12/10/19 19:45	1
Isopropyl alcohol	ND		250	180	ug/L			12/10/19 19:45	1
<b>Surrogate</b>									
	<b>%Recovery</b>	<b>Qualifier</b>		<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	95			70 - 130				12/10/19 19:45	1
4-Bromofluorobenzene (Surr)	96			80 - 120				12/10/19 19:45	1
Dibromofluoromethane (Surr)	99			76 - 132				12/10/19 19:45	1
Toluene-d8 (Surr)	100			80 - 128				12/10/19 19:45	1

**Lab Sample ID: LCS 440-585070/1002**

**Matrix: Water**

**Analysis Batch: 585070**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
Acetone		125	113		ug/L		90	10 - 150
<b>Surrogate</b>								
	<b>%Recovery</b>	<b>Qualifier</b>		<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	91			70 - 130				
4-Bromofluorobenzene (Surr)	97			80 - 120				
Dibromofluoromethane (Surr)	101			76 - 132				
Toluene-d8 (Surr)	101			80 - 128				

**Lab Sample ID: 440-256779-D-16 MS**

**Matrix: Water**

**Analysis Batch: 585070**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec.	Limits
Acetone	ND	F1	50.0	137	F1	ug/L	275	10 - 150	

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** 440-256779-D-16 MS

**Matrix:** Water

**Analysis Batch:** 585070

**Client Sample ID:** Matrix Spike  
**Prep Type:** Total/NA

Surrogate	MS	MS	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93				70 - 130
4-Bromofluorobenzene (Surr)	109				80 - 120
Dibromofluoromethane (Surr)	96				76 - 132
Toluene-d8 (Surr)	99				80 - 128

**Lab Sample ID:** 440-256779-D-16 MSD

**Matrix:** Water

**Analysis Batch:** 585070

**Client Sample ID:** Matrix Spike Duplicate  
**Prep Type:** Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	RPD Limit
Acetone	ND	F1	50.0	131	F1	ug/L	261	10 - 150	5	35

Surrogate	MSD	MSD	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90				70 - 130
4-Bromofluorobenzene (Surr)	106				80 - 120
Dibromofluoromethane (Surr)	97				76 - 132
Toluene-d8 (Surr)	101				80 - 128

## Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

**Lab Sample ID:** MB 440-584899/1-A

**Matrix:** Water

**Analysis Batch:** 585262

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 584899

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.10	ug/L		12/10/19 08:58	12/11/19 12:10	1

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	69				27 - 120	12/10/19 08:58	12/11/19 12:10	1

**Lab Sample ID:** LCS 440-584899/3-A

**Matrix:** Water

**Analysis Batch:** 585262

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA  
**Prep Batch:** 584899

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
1,4-Dioxane	2.00	1.30		ug/L	65	36 - 120	

Surrogate	LCS	LCS	%Recovery	Qualifier	Limits
1,4-Dioxane-d8 (Surr)	64				27 - 120

**Lab Sample ID:** LCSD 440-584899/4-A

**Matrix:** Water

**Analysis Batch:** 585262

**Client Sample ID:** Lab Control Sample Dup  
**Prep Type:** Total/NA  
**Prep Batch:** 584899

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec.	RPD	RPD Limit
1,4-Dioxane	2.00	1.33		ug/L	67	36 - 120	2	35

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
SDG: Omega Chemical

## Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCSD 440-584899/4-A

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 585262

Prep Batch: 584899

Surrogate	LCSD	LCSD	%Recovery	Qualifier	Limits
1,4-Dioxane-d8 (Surr)			66		27 - 120

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# QC Association Summary

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
 SDG: Omega Chemical

## GC/MS VOA

### Analysis Batch: 584863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-256836-1	OC_SP220B_EFF_120619	Total/NA	Water	8260B	
440-256836-2	OC_SP210_INF_120619	Total/NA	Water	8260B	
440-256836-3	OC_TB_120619	Total/NA	Water	8260B	
MB 440-584863/4	Method Blank	Total/NA	Water	8260B	
LCS 440-584863/1002	Lab Control Sample	Total/NA	Water	8260B	
LCS 440-584863/1003	Lab Control Sample	Total/NA	Water	8260B	
440-256855-C-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-256855-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 585070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-256836-1 - RA	OC_SP220B_EFF_120619	Total/NA	Water	8260B	
MB 440-585070/4	Method Blank	Total/NA	Water	8260B	
LCS 440-585070/1002	Lab Control Sample	Total/NA	Water	8260B	
440-256779-D-16 MS	Matrix Spike	Total/NA	Water	8260B	
440-256779-D-16 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 584899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-256836-1	OC_SP220B_EFF_120619	Total/NA	Water	3520C	
MB 440-584899/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-584899/3-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-584899/4-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 585262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-256836-1	OC_SP220B_EFF_120619	Total/NA	Water	8270C SIM	584899
MB 440-584899/1-A	Method Blank	Total/NA	Water	8270C SIM	584899
LCS 440-584899/3-A	Lab Control Sample	Total/NA	Water	8270C SIM	584899
LCSD 440-584899/4-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM	584899

# Definitions/Glossary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
SDG: Omega Chemical

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

### Abbreviation

These commonly used abbreviations may or may not be present in this report.

D	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Accreditation/Certification Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical - GWCS Monthly

Job ID: 440-256836-1  
SDG: Omega Chemical

## Laboratory: Eurofins TestAmerica, Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State Program	CA ELAP 2706	06-30-20
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8270C SIM	3520C	Water	1,4-Dioxane



## Login Sample Receipt Checklist

Client: Jacob & Hefner Associates P.C.

Job Number: 440-256836-1  
SDG Number: Omega Chemical

**Login Number:** 256836

**List Source:** Eurofins TestAmerica, Irvine

**List Number:** 1

**Creator:** Escalante, Maria I

Question	Answer	Comment	
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True		1
The cooler's custody seal, if present, is intact.	N/A	Not present	2
Sample custody seals, if present, are intact.	N/A	Not Present	3
The cooler or samples do not appear to have been compromised or tampered with.	True		4
Samples were received on ice.	True		5
Cooler Temperature is acceptable.	True		6
Cooler Temperature is recorded.	True		7
COC is present.	True		8
COC is filled out in ink and legible.	True		9
COC is filled out with all pertinent information.	True		10
Is the Field Sampler's name present on COC?	True		11
There are no discrepancies between the containers received and the COC.	True		12
Samples are received within Holding Time (excluding tests with immediate HTs)	True		13
Sample containers have legible labels.	True		14
Containers are not broken or leaking.	True		15
Sample collection date/times are provided.	True		
Appropriate sample containers are used.	True		
Sample bottles are completely filled.	True		
Sample Preservation Verified.	N/A		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True		
Multiphasic samples are not present.	True		
Samples do not require splitting or compositing.	True		
Residual Chlorine Checked.	N/A		

## **ATTACHMENT D**

# **Sanitation Districts of Los Angeles County Industrial Wastewater Self-Monitoring Report**

**OMEGA CHEMICAL SITE PRP ORGANIZED GROUP**

---

1322 Scott Street,  
Suite 104  
San Diego, CA 92106  
Office :(619)-546-8377, fax: (619) 546-9980  
e-mail: [edm@demaximis.com](mailto:edm@demaximis.com)

January 15, 2020

Ms. Grace Robinson Hyde  
Chief Engineer and General Manager  
County Sanitation Districts of Los Angeles County  
1955 Workman Mill Road  
Whittier, CA 90601-1400

Subject:      Self-Monitoring Report – 4<sup>th</sup> Quarter 2019  
Permit Number 20039, Surcharge Account Number 2113183

Dear Ms. Grace Robinson Hyde,

This letter transmits the 4<sup>th</sup> Quarter 2019 Self-Monitoring Report (SMR) for the Omega Chemical Site located at 12520 East Whittier Blvd., Whittier, California. Feel free to contact me if you need any additional information.

Sincerely,

Omega Chemical Site PRP Organized Group



Edward Modiano  
Project Coordinator

For information, please call Loretta Benites  
(562) 699-7411 Ext. 2927**INDUSTRIAL WASTEWATER SELF MONITORING REPORT****Reporting Period From: 10/01/2019 To: 12/31/2019 Report Due No Later Than : 01/15/2020**Company Name: **Omega Chemical Site PRP Group LLC**Wastewater Discharge Address: **12520 WHITTIER Blvd Whittier, CA, 90602**Sample Location: **20039A**Mailing Address: **1322 Scott Street # 104 San Diego, CA, 92106**Industrial Wastewater Contact Name and Phone Number: **Mr. Ravi Subramanian****949-752-5452 x277 - Business**Has Ownership or Occupancy Changed Since the Last Report?  Yes  No

(Print) Name of Company Collecting Wastewater Sample:	<b>Test America</b>	(Print) Sample Date:	<b>11/15/2019</b>
---	---------------------	----------------------	-------------------

Daily Wastewater Discharge for Reporting Period	Method For Determining Wastewater Flow for Sampling Day	Type of Composite Sample
Average: <b>7,262</b> GPD	<input checked="" type="checkbox"/> Direct Measurement <input type="checkbox"/> Adjusted Metered Water Supply <input type="checkbox"/> No Discharge During Reporting Period	<input checked="" type="checkbox"/> Time Composite <input type="checkbox"/> Flow Proportioned Composite
Maximum: <b>8,558</b> GPD		

Comments:

Parameter (1)	Sample Method (2)	Permit Limit (3)	Test Results (4)	Reporting Limit (5)	Unit (6)	Lab ID Code (7)
Z02 Sample Day Peak Flow			11.7		gpm	
Z01 Sample Day Total Flow			7,841		GPD	
101 pH	GRAB	Federal Daily Minimum 5.0 S.U. Local Daily Minimum 6.0 S.U.	8.7		S.U.	10256
151 Solids, Suspended	COMPOSITE		1.9		mg/L	10256
252 Sulfide, Soluble	GRAB	Local At Any Time 0.1 mg/L	ND	0.050	mg/L	10256
403 COD, Total	COMPOSITE		26		mg/L	10256
696 1,4-Dioxane	GRAB		17		ug/L	10256
T09 TTO, Volatile	GRAB	Local At Any Time 1000 ug/L	LACSD calculates this value.		ug/L	
601 Methylene Chloride	GRAB		ND	5.0	ug/L	10256
602 Chloroform	GRAB		ND	1.0	ug/L	10256
603 1,1,1-Trichloroethane	GRAB		ND	1.0	ug/L	10256
604 Carbon Tetrachloride	GRAB		ND	0.50	ug/L	10256
605 1,1-Dichloroethene	GRAB		ND	1.0	ug/L	10256
606 Trichloroethylene	GRAB		ND	1.0	ug/L	10256
607 Tetrachloroethylene	GRAB		ND	1.0	ug/L	10256
608 Bromodichloromethane	GRAB		ND	1.0	ug/L	10256
609 Dibromochloromethane	GRAB		ND	1.0	ug/L	10256
610 Bromoform	GRAB		ND	1.0	ug/L	10256
611 Chlorobenzene	GRAB		ND	1.0	ug/L	10256
612 Vinyl Chloride	GRAB		ND	0.50	ug/L	10256

Please submit this report to: Sanitation Districts of Los Angeles County - Industrial Waste Section P.O. Box 4998 Whittier, CA 90607-4998

## INDUSTRIAL WASTEWATER SELF MONITORING REPORT

Report due no later than : 01/15/2020

Page 2 of 4

Permit Number:

20039

Facility ID:

2113183

Company Name: Omega Chemical Site PRP Group LLC

Sample Location: 20039A Reporting Period From: 10/01/2019 To: 12/31/2019

<u>Parameter (1)</u>	<u>Sample Method (2)</u>	<u>Permit Limit (3)</u>		<u>Test Results (4)</u>	<u>Reporting Limit (5)</u>	<u>Unit (6)</u>	<u>Lab ID Code (7)</u>
613 o-Dichlorobenzene	GRAB			ND	1.0	ug/L	10256
614 m-Dichlorobenzene	GRAB			ND	1.0	ug/L	10256
615 p-Dichlorobenzene	GRAB			ND	1.0	ug/L	10256
616 1,1-Dichloroethane	GRAB			ND	1.0	ug/L	10256
618 1,1,2-Trichloroethane	GRAB			ND	1.0	ug/L	10256
619 1,2-Dichloroethane	GRAB			ND	1.0	ug/L	10256
620 Benzene	GRAB			ND	0.5	ug/L	10256
621 Toluene	GRAB			ND	1.0	ug/L	10256
624 Ethyl Benzene	GRAB			ND	1.0	ug/L	10256
645 trans-1,2-Dichloroethylene	GRAB			ND	1.0	ug/L	10256
646 Bromomethane	GRAB			ND	1.0	ug/L	10256
647 Chloroethane	GRAB			ND	1.0	ug/L	10256
648 2-Chloroethylvinylether	GRAB			ND	2.0	ug/L	10256
649 Chloromethane	GRAB			ND	1.0	ug/L	10256
650 1,2-Dichloropropane	GRAB			ND	1.0	ug/L	10256
651 cis-1,3-Dichloropropene	GRAB			ND	0.5	ug/L	10256
652 trans-1,3-Dichloropropene	GRAB			ND	0.5	ug/L	10256
653 1,1,2,2-Tetrachloroethane	GRAB			ND	1.0	ug/L	10256
T10 TTO, Semi-Volatile	GRAB	Local	At Any Time	1000 ug/L	LACSD calculates this value.	ug/L	
800 Acenaphthene	GRAB			ND	9.8	ug/L	10256
801 Acenaphthylene	GRAB			ND	9.8	ug/L	10256
802 Anthracene	GRAB			ND	9.8	ug/L	10256
803 Benzidine	GRAB			ND	39	ug/L	10256
804 Benzo(a)anthracene	GRAB			ND	9.8	ug/L	10256
805 Benzo(a)pyrene	GRAB			ND	9.8	ug/L	10256
806 Benzo(b)fluoranthene	GRAB			ND	9.8	ug/L	10256
807 Benzo(g,h,i)perylene	GRAB			ND	9.8	ug/L	10256
808 Benzo(k)fluoranthene	GRAB			ND	9.8	ug/L	10256
809 Bis(2-cl-ethoxy)methane	GRAB			ND	9.8	ug/L	10256
810 Bis(2-chloroethyl)ether	GRAB			ND	9.8	ug/L	10256
811 Bis(2-cl-isopropyl)ether	GRAB			ND	9.8	ug/L	10256
812 bis(2-ethylhexyl) Phthalate	GRAB			ND	20	ug/L	10256
813 4-bromophenyl Phenylether	GRAB			ND	9.8	ug/L	10256
814 butylbenzyl Phthalate	GRAB			ND	20	ug/L	10256
815 2-Chloronaphthalene	GRAB			ND	9.8	ug/L	10256
816 4-Chlorophenylphenylether	GRAB			ND	9.8	ug/L	10256
817 Chrysene	GRAB			ND	9.8	ug/L	10256

Please submit this report to: Sanitation Districts of Los Angeles County - Industrial Waste Section P.O. Box 4998 Whittier, CA 90607-4998

## INDUSTRIAL WASTEWATER SELF MONITORING REPORT

Report due no later than : 01/15/2020

Page 3 of 4

Permit Number:

20039

Facility ID:

2113183

Company Name: Omega Chemical Site PRP Group LLC

Sample Location: 20039A Reporting Period From: 10/01/2019 To: 12/31/2019

<u>Parameter (1)</u>	<u>Sample Method (2)</u>	<u>Permit Limit (3)</u>	<u>Test Results (4)</u>	<u>Reporting Limit (5)</u>	<u>Unit (6)</u>	<u>Lab ID Code (7)</u>
818 dibenzo(a,h)Anthracene	GRAB		ND	20	ug/L	10256
822 3,3-Dichlorobenzidine	GRAB		ND	39	ug/L	10256
823 diethyl Phthalate	GRAB		ND	9.8	ug/L	10256
824 dimethyl Phthalate	GRAB		ND	9.8	ug/L	10256
825 di-n-butyl Phthalate	GRAB		ND	20	ug/L	10256
826 2,4-Dinitrotoluene	GRAB		ND	9.8	ug/L	10256
827 2,6-Dinitrotoluene	GRAB		ND	9.8	ug/L	10256
828 di-n-octyl Phthalate	GRAB		ND	20	ug/L	10256
829 1,2-Diphenylhydrazine	GRAB		ND	20	ug/L	10256
830 Fluoranthene	GRAB		ND	9.8	ug/L	10256
831 Fluorene	GRAB		ND	9.8	ug/L	10256
832 Hexachlorobenzene	GRAB		ND	9.8	ug/L	10256
833 Hexachlorobutadiene	GRAB		ND	9.8	ug/L	10256
834 Hexachlorocyclopentadiene	GRAB		ND	20	ug/L	10256
835 Hexachloroethane	GRAB		ND	9.8	ug/L	10256
836 Indeno(1,2,3-c,d)Pyrene	GRAB		ND	20	ug/L	10256
837 Isophorone	GRAB		ND	9.8	ug/L	10256
838 Naphthalene	GRAB		ND	9.8	ug/L	10256
839 Nitrobenzene	GRAB		ND	20	ug/L	10256
840 n-Nitrosodimethylamine	GRAB		ND	20	ug/L	10256
841 n-Nitrosodi-n-Propylamine	GRAB		ND	9.8	ug/L	10256
842 Phenanthrene	GRAB		ND	9.8	ug/L	10256
843 Pyrene	GRAB		ND	9.8	ug/L	10256
845 2-Chlorophenol (Organic-BNA)	GRAB		ND	9.8	ug/L	10256
846 1,2,4-Trichlorobenzene	GRAB		ND	9.8	ug/L	10256
847 2,4-Dichlorophenol (Organic-BNA)	GRAB		ND	9.8	ug/L	10256
848 2,4-Dimethylphenol (Organic-BNA)	GRAB		ND	20	ug/L	10256
849 2,4-Dinitrophenol	GRAB		ND	39	ug/L	10256
850 2-methyl-4,6-dinitrophenol	GRAB		ND	20	ug/L	10256
851 2-Nitrophenol	GRAB		ND	9.8	ug/L	10256
852 4-Nitrophenol	GRAB		ND	20	ug/L	10256
853 4-chloro-3-Methylphenol (Organic-BNA)	GRAB		ND	20	ug/L	10256
854 Pentachlorophenol (Organic-BNA)	GRAB		ND	20	ug/L	10256
855 Phenol	GRAB		ND	9.8	ug/L	10256

Please submit this report to: Sanitation Districts of Los Angeles County - Industrial Waste Section P.O. Box 4998 Whittier, CA 90607-4998

## INDUSTRIAL WASTEWATER SELF MONITORING REPORT

Report due no later than : 01/15/2020

Page 4 of 4

Permit Number:

20039

Facility ID:

2113183

Company Name: Omega Chemical Site PRP Group LLC

Sample Location: 20039A Reporting Period From: 10/01/2019 To: 12/31/2019

<u>Parameter (1)</u>	<u>Sample Method (2)</u>	<u>Permit Limit (3)</u>	<u>Test Results (4)</u>	<u>Reporting Limit (5)</u>	<u>Unit (6)</u>	<u>Lab ID Code (7)</u>
856 2,4,6-Trichlorophenol	GRAB		ND	20	ug/L	10256
857 n-Nitrosodiphenylamine	GRAB		ND	9.8	ug/L	10256

(1) Report the test results from the most recent sample collected within the reporting period and include all laboratory test sheets with the selfmonitoring report form.

(2) Test results are valid only if the correct sampling method is observed and the laboratory analysis is performed by a State or Sanitation Districts approved laboratory.

(3) Permit limits are included on this form for convenience. For a full list of all applicable permit limits, refer to your Permit Data Sheet.

(4) Enter "ND" (Non Detect) for any result less than (<) the reporting limit.

(5) If the test result is "ND", enter the reporting limit; otherwise leave blank. The reporting limit can be found in your laboratory test sheet.

(6) Default units are listed. Cross out and write in applicable units if laboratory did not report results with these same units.

(7) Indicate the appropriate laboratory certification I.D. code for each testing parameter.

## CERTIFICATION BY PERMITTEE

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

1/15/2020

Signature of responsible company official: \_\_\_\_\_ Date: \_\_\_\_\_

Nicole Bradley

Project Manager on Behalf of OPOG

Print name of official: \_\_\_\_\_

Title: \_\_\_\_\_

LACSD USE ONLY

Monitoring ID: 558546

Lab Report?  Yes  No Signature?  Yes  No Date Received: \_\_\_\_\_ Initials: \_\_\_\_\_



# SANITATION DISTRICTS OF LOS ANGELES COUNTY

ROBERT C. FERRANTE  
CHIEF ENGINEER  
AND GENERAL MANAGER

Page \_\_\_\_\_ of \_\_\_\_\_

**Permit Number:**

20039

**Facility ID:**

2113183

## **SUPPLEMENTAL MONITORING DATA (OPTIONAL)**

It is not mandatory to perform supplemental monitoring of your facility's wastewater discharge. However, if you choose to perform additional testing, you must report the results of all analyses using this form. Supplemental monitoring data should not include results used in Self-Monitoring Reports.

Company Name: **Omega Chemical Site PRP Group LLC**

Sample Location: 20039A Reporting Period From: 10/01/2019 To: 12/31/2019

(Print) Name of Company Collecting Wastewater Sample:

**Comments:**

- (1) Include all laboratory test sheets for each reported parameter.
  - (2) Test results are valid only if the correct sampling method is observed and the laboratory analysis is performed by a State or Sanitation Districts approved laboratory.
  - (3) Enter "ND" (Non Detect) for any result less than (<) the reporting limit.
  - (4) If the test result is "ND", enter the reporting limit; otherwise leave blank. The reporting limit can be found in your laboratory test sheet.
  - (5) Indicate the appropriate laboratory certification I.D. code for each testing parameter.
  - (6) If the results are from a split sample that was collected by the Sanitation Districts, write "Yes"; otherwise, leave blank.

CERTIFICATION BY PERMITTEE

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of responsible company official: \_\_\_\_\_ Date: \_\_\_\_\_

Print name of official: \_\_\_\_\_ Title: \_\_\_\_\_

LACSD USE ONLY - Non-Permit SMR  
Lab Report?  Yes  No      Signature?  Yes  No      Date Received: \_\_\_\_\_ Initials: \_\_\_\_\_

Please submit this report to: Sanitation Districts of Los Angeles County - Industrial Waste Section P.O. Box 4998 Whittier, CA 90607-4998



## ANALYTICAL REPORT

Eurofins TestAmerica, Irvine  
17461 Derian Ave  
Suite 100  
Irvine, CA 92614-5817  
Tel: (949)261-1022

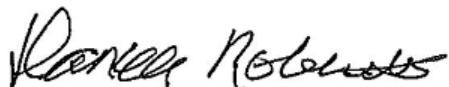
Laboratory Job ID: 440-254649-1

Laboratory Sample Delivery Group: Whittier, CA  
Client Project/Site: Omega Chemical Wastewater

**For:**

Jacob & Hefner Associates P.C.  
15375 Barranca Parkway, J-101  
Irvine, California 92618

Attn: Trent Henderson



Authorized for release by:  
11/28/2019 6:00:49 AM

Danielle Roberts, Senior Project Manager  
(949)260-3249  
[danielle.roberts@testamericainc.com](mailto:danielle.roberts@testamericainc.com)

LINKS

Review your project  
results through

Total Access

Have a Question?

 Ask  
The  
Expert

Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## Sample Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-254649-1	COMPOSITE_20191115	Water	11/15/19 08:20	11/15/19 11:10	
440-254649-2	GRAB_20191115	Water	11/15/19 08:30	11/15/19 11:10	

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Eurofins TestAmerica, Irvine

# Case Narrative

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Job ID: 440-254649-1

### Laboratory: Eurofins TestAmerica, Irvine

#### Narrative

#### Job Narrative 440-254649-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 11/15/2019 12:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

#### GC/MS VOA

Method 8260B: The matrix spike / matrix spike duplicate (MS/MSD) precision for analytical batch 440-580924 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC/MS Semi VOA

Method 8270C: The following compounds were outside control limits in the continuing calibration verification (CCV) associated with batch 440-581738: bis (2-chloroisopropyl) ether. These compounds are not classified as Calibration Check Compounds (CCCs) in the reference method, and the laboratory defaults to in-house and/or project-specific criteria for evaluation. A reporting limit standard was run in sequence to verify the instrument sensitivity for this analyte. The following sample(s) were non-detect for this analyte and thus were not adversely affected.

Method 8270C: The laboratory control sample (LCS) for preparation batch 440-581183 and analytical batch 440-581738 recovered outside control limits for the following analyte(s): Benzidine. Benzidine is known to be subject to oxidative losses during solvent concentration using this method; therefore, re-extraction and re-analysis were not performed. Benzidine is reported as possible low bias.

Method 8270C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-581183 and analytical batch 440-581738 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Field Service / Mobile Lab

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### General Chemistry

Method SM 4500 S2 D: The following samples were improperly preserved in the field: GRAB\_20191115 (440-254649-2), (440-254649-H-2-B MS) and (440-254649-H-2-C MSD). The sample was unpreserved, Sodium hydroxide was added to the sample to adjust the pH from 7 to >14.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Organic Prep

Method 3520C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 8270C preparation batch 440-580937. LCS was performed in duplicate to provide precision of data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

## Detection Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

### Client Sample ID: COMPOSITE\_20191115

### Lab Sample ID: 440-254649-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	1.9		1.0	mg/L	1		SM 2540D	Total/NA
Chemical Oxygen Demand	26		20	mg/L	1		SM 5220D	Total/NA

### Client Sample ID: GRAB\_20191115

### Lab Sample ID: 440-254649-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	17		0.49	ug/L	1		8270C SIM	Total/NA
pH	8.7	HF	0.1	SU	1		SM 4500 H+ B	Total/NA
Field pH	8.68			SU	1		Field Sampling	Total/NA
Field Temperature	17.40			Celsius	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## **Client Sample ID: COMPOSITE\_20191115**

Date Collected: 11/15/19 08:20  
Date Received: 11/15/19 11:10

## **Lab Sample ID: 440-254649-1**

Matrix: Water

### **General Chemistry**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.9		1.0	mg/L			11/15/19 17:14	1
Chemical Oxygen Demand	26		20	mg/L			11/20/19 10:19	1

## **Client Sample ID: GRAB\_20191115**

Date Collected: 11/15/19 08:30  
Date Received: 11/15/19 11:10

## **Lab Sample ID: 440-254649-2**

Matrix: Water

### **Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L			11/19/19 21:39	1
1,1,1-Trichloroethane	ND		1.0	ug/L			11/19/19 21:39	1
2-Chloroethyl vinyl ether	ND		2.0	ug/L			11/19/19 10:34	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			11/19/19 21:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	ug/L			11/19/19 21:39	1
Acrolein	ND		5.0	ug/L			11/19/19 10:34	1
1,1,2-Trichloroethane	ND		1.0	ug/L			11/19/19 21:39	1
Acrylonitrile	ND		2.0	ug/L			11/19/19 10:34	1
1,1-Dichloroethane	ND		1.0	ug/L			11/19/19 21:39	1
1,1-Dichloroethene	ND		1.0	ug/L			11/19/19 21:39	1
1,1-Dichloropropene	ND		1.0	ug/L			11/19/19 21:39	1
Total Volatile Organic Compounds	ND		150	ug/L			11/19/19 10:34	1
1,2,3-Trichlorobenzene	ND		1.0	ug/L			11/19/19 21:39	1
1,2,3-Trichloropropane	ND		1.0	ug/L			11/19/19 21:39	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			11/19/19 21:39	1
1,2,4-Trimethylbenzene	ND		1.0	ug/L			11/19/19 21:39	1
1,2-Dibromo-3-Chloropropane	ND		5.0	ug/L			11/19/19 21:39	1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L			11/19/19 21:39	1
1,2-Dichlorobenzene	ND		1.0	ug/L			11/19/19 21:39	1
1,2-Dichloroethane	ND		1.0	ug/L			11/19/19 21:39	1
1,2-Dichloropropane	ND		1.0	ug/L			11/19/19 21:39	1
1,3,5-Trimethylbenzene	ND		1.0	ug/L			11/19/19 21:39	1
1,3-Dichlorobenzene	ND		1.0	ug/L			11/19/19 21:39	1
1,3-Dichloropropane	ND		1.0	ug/L			11/19/19 21:39	1
1,4-Dichlorobenzene	ND		1.0	ug/L			11/19/19 21:39	1
2,2-Dichloropropane	ND		1.0	ug/L			11/19/19 21:39	1
2-Chlorotoluene	ND		1.0	ug/L			11/19/19 21:39	1
4-Chlorotoluene	ND		1.0	ug/L			11/19/19 21:39	1
Acetone	ND		10	ug/L			11/19/19 21:39	1
Benzene	ND		0.50	ug/L			11/19/19 21:39	1
Bromobenzene	ND		1.0	ug/L			11/19/19 21:39	1
Bromochloromethane	ND		1.0	ug/L			11/19/19 21:39	1
Bromodichloromethane	ND		1.0	ug/L			11/19/19 21:39	1
Bromoform	ND		1.0	ug/L			11/19/19 21:39	1
Bromomethane	ND		1.0	ug/L			11/19/19 21:39	1
Carbon tetrachloride	ND		0.50	ug/L			11/19/19 21:39	1
Chlorobenzene	ND		1.0	ug/L			11/19/19 21:39	1
Chloroethane	ND		1.0	ug/L			11/19/19 21:39	1
Chloroform	ND		1.0	ug/L			11/19/19 21:39	1
Chloromethane	ND		1.0	ug/L			11/19/19 21:39	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			11/19/19 21:39	1

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

**Client Sample ID: GRAB\_20191115**

Date Collected: 11/15/19 08:30

Date Received: 11/15/19 11:10

**Lab Sample ID: 440-254649-2**

Matrix: Water

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.50	ug/L		11/19/19 21:39		1
Dibromochloromethane	ND		1.0	ug/L		11/19/19 21:39		1
Dibromomethane	ND		1.0	ug/L		11/19/19 21:39		1
Dichlorodifluoromethane	ND		1.0	ug/L		11/19/19 21:39		1
Ethylbenzene	ND		1.0	ug/L		11/19/19 21:39		1
Hexachlorobutadiene	ND		1.0	ug/L		11/19/19 21:39		1
Isopropyl alcohol	ND		250	ug/L		11/19/19 21:39		1
Isopropylbenzene	ND		1.0	ug/L		11/19/19 21:39		1
m,p-Xylene	ND		1.0	ug/L		11/19/19 21:39		1
Methylene Chloride	ND		5.0	ug/L		11/19/19 21:39		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	ug/L		11/19/19 21:39		1
Naphthalene	ND		1.0	ug/L		11/19/19 21:39		1
n-Butylbenzene	ND		1.0	ug/L		11/19/19 21:39		1
N-Propylbenzene	ND		1.0	ug/L		11/19/19 21:39		1
o-Xylene	ND		1.0	ug/L		11/19/19 21:39		1
p-Isopropyltoluene	ND		1.0	ug/L		11/19/19 21:39		1
sec-Butylbenzene	ND		1.0	ug/L		11/19/19 21:39		1
Styrene	ND		1.0	ug/L		11/19/19 21:39		1
tert-Butylbenzene	ND		1.0	ug/L		11/19/19 21:39		1
Tetrachloroethene	ND		1.0	ug/L		11/19/19 21:39		1
Toluene	ND		1.0	ug/L		11/19/19 21:39		1
trans-1,2-Dichloroethene	ND		1.0	ug/L		11/19/19 21:39		1
trans-1,3-Dichloropropene	ND		0.50	ug/L		11/19/19 21:39		1
Trichloroethene	ND		1.0	ug/L		11/19/19 21:39		1
Trichlorofluoromethane	ND		1.0	ug/L		11/19/19 21:39		1
Vinyl chloride	ND		0.50	ug/L		11/19/19 21:39		1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		11/19/19 10:34	1
4-Bromofluorobenzene (Surr)	101		80 - 120		11/19/19 10:34	1
Dibromofluoromethane (Surr)	97		76 - 132		11/19/19 10:34	1
Toluene-d8 (Surr)	114		80 - 128		11/19/19 10:34	1
1,2-Dichloroethane-d4 (Surr)	93		70 - 130		11/19/19 21:39	1
4-Bromofluorobenzene (Surr)	98		80 - 120		11/19/19 21:39	1
Dibromofluoromethane (Surr)	96		76 - 132		11/19/19 21:39	1
Toluene-d8 (Surr)	102		80 - 128		11/19/19 21:39	1

## Method: 8270C SIM - 1,4 Dioxane by SIM

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	17		0.49	ug/L		11/19/19 08:01	11/20/19 10:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
1,4-Dioxane-d8 (Surr)	64		27 - 120		11/19/19 08:01	11/20/19 10:08	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
1,2-Dichlorobenzene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		20	ug/L		11/20/19 09:19	11/22/19 13:07	1
1,3-Dichlorobenzene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

**Client Sample ID: GRAB\_20191115**

Date Collected: 11/15/19 08:30

Date Received: 11/15/19 11:10

**Lab Sample ID: 440-254649-2**

Matrix: Water

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,4,5-Trichlorophenol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,4,6-Trichlorophenol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,4-Dichlorophenol	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,4-Dimethylphenol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,4-Dinitrophenol	ND		39	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,4-Dinitrotoluene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2,6-Dinitrotoluene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2-Chloronaphthalene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2-Chlorophenol	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2-Methylnaphthalene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2-Methylphenol	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
2-Nitroaniline	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
2-Nitrophenol	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
3,3'-Dichlorobenzidine	ND		39	ug/L	11/20/19 09:19	11/22/19 13:07		1
3-Methylphenol + 4-Methylphenol	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
3-Nitroaniline	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
4,6-Dinitro-2-methylphenol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
4-Bromophenyl phenyl ether	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
4-Chloro-3-methylphenol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
4-Chloroaniline	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
4-Chlorophenyl phenyl ether	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
4-Nitroaniline	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
4-Nitrophenol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Acenaphthene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Acenaphthylene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Aniline	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Anthracene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzidine	ND *		39	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzo[a]anthracene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzo[a]pyrene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzo[b]fluoranthene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzo[g,h,i]perylene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzo[k]fluoranthene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzoic acid	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Benzyl alcohol	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
bis (2-chloroisopropyl) ether	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Bis(2-chloroethoxy)methane	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Bis(2-chloroethyl)ether	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Bis(2-ethylhexyl) phthalate	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Butyl benzyl phthalate	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Chrysene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Dibenz(a,h)anthracene	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Dibenzofuran	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Diethyl phthalate	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Dimethyl phthalate	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1
Di-n-butyl phthalate	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Di-n-octyl phthalate	ND		20	ug/L	11/20/19 09:19	11/22/19 13:07		1
Fluoranthene	ND		9.8	ug/L	11/20/19 09:19	11/22/19 13:07		1

Eurofins TestAmerica, Irvine

# Client Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

**Client Sample ID: GRAB\_20191115**

Date Collected: 11/15/19 08:30

Date Received: 11/15/19 11:10

**Lab Sample ID: 440-254649-2**

Matrix: Water

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Hexachlorobenzene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Hexachlorobutadiene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Hexachlorocyclopentadiene	ND		20	ug/L		11/20/19 09:19	11/22/19 13:07	1
Hexachloroethane	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Indeno[1,2,3-cd]pyrene	ND		20	ug/L		11/20/19 09:19	11/22/19 13:07	1
Isophorone	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Naphthalene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Nitrobenzene	ND		20	ug/L		11/20/19 09:19	11/22/19 13:07	1
N-Nitrosodimethylamine	ND		20	ug/L		11/20/19 09:19	11/22/19 13:07	1
N-Nitrosodi-n-propylamine	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
N-Nitrosodiphenylamine	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Pentachlorophenol	ND		20	ug/L		11/20/19 09:19	11/22/19 13:07	1
Phenanthrene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Phenol	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1
Pyrene	ND		9.8	ug/L		11/20/19 09:19	11/22/19 13:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	89		40 - 120	11/20/19 09:19	11/22/19 13:07	1
2-Fluorobiphenyl	85		50 - 120	11/20/19 09:19	11/22/19 13:07	1
2-Fluorophenol (Surr)	68		30 - 120	11/20/19 09:19	11/22/19 13:07	1
Nitrobenzene-d5 (Surr)	71		45 - 120	11/20/19 09:19	11/22/19 13:07	1
Phenol-d6 (Surr)	66		35 - 120	11/20/19 09:19	11/22/19 13:07	1
Terphenyl-d14 (Surr)	89		10 - 150	11/20/19 09:19	11/22/19 13:07	1

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.7	HF	0.1	SU		11/18/19 14:51		1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Dissolved	ND	HF	0.050	mg/L		11/19/19 17:09	11/19/19 18:05	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	8.68			SU		11/15/19 08:30		1
Field Temperature	17.40			Celsius		11/15/19 08:30		1

# Surrogate Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (70-130)	BFB (80-120)	DBFM (76-132)	TOL (80-128)
440-254649-2	GRAB_20191115	100	101	97	114
440-254649-2	GRAB_20191115	93	98	96	102
440-254703-B-1 MS	Matrix Spike	99	100	97	109
440-254703-C-1 MSD	Matrix Spike Duplicate	100	101	97	110
440-254876-E-1 MS	Matrix Spike	97	101	93	101
440-254876-E-1 MSD	Matrix Spike Duplicate	100	100	96	96
LCS 440-580924/1002	Lab Control Sample	99	103	94	109
LCS 440-581077/1002	Lab Control Sample	96	101	91	95
LCS 440-581077/1003	Lab Control Sample	94	100	92	100
MB 440-580924/4	Method Blank	98	103	95	113
MB 440-581077/4	Method Blank	96	98	93	100

### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (40-120)	FBP (50-120)	2FP (30-120)	NBZ (45-120)	PHL6 (35-120)	TPHL (10-150)
440-254649-2	GRAB_20191115	89	85	68	71	66	89
550-133382-D-11-A MS	Matrix Spike	86	76	65	72	67	70
550-133382-D-11-B MSD	Matrix Spike Duplicate	87	73	61	69	61	70
LCS 440-581183/2-A	Lab Control Sample	86	80	67	72	67	94
MB 440-581183/1-A	Method Blank	84	81	65	69	62	91

### Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol (Surr)

NBZ = Nitrobenzene-d5 (Surr)

PHL6 = Phenol-d6 (Surr)

TPHL = Terphenyl-d14 (Surr)

## Method: 8270C SIM - 1,4 Dioxane by SIM

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DXE (27-120)	
440-254649-2	GRAB_20191115	64	
LCS 440-580937/2-A	Lab Control Sample	69	
LCSD 440-580937/3-A	Lab Control Sample Dup	66	
MB 440-580937/1-A	Method Blank	63	

### Surrogate Legend

DXE = 1,4-Dioxane-d8 (Surr)

Eurofins TestAmerica, Irvine

## Method Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C SIM	1,4 Dioxane by SIM	SW846	TAL IRV
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL IRV
SM 4500 H+ B	pH	SM	TAL IRV
SM 4500 S2 D	Sulfide, Total	SM	TAL IRV
SM 5220D	COD	SM	TAL IRV
Field Sampling	Field Sampling	EPA	TAL IRV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV
SM 4500 S2 B	Sulfide, Separation of Soluble and Insoluble	SM	TAL IRV

### Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# Lab Chronicle

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

**Client Sample ID: COMPOSITE\_20191115**

**Lab Sample ID: 440-254649-1**

**Matrix: Water**

Date Collected: 11/15/19 08:20

Date Received: 11/15/19 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	580480	11/15/19 17:14	XL	TAL IRV
Total/NA	Analysis	SM 5220D		1	2 mL	2 mL	581224	11/20/19 10:19	KYP	TAL IRV

**Client Sample ID: GRAB\_20191115**

**Lab Sample ID: 440-254649-2**

**Matrix: Water**

Date Collected: 11/15/19 08:30

Date Received: 11/15/19 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	580924	11/19/19 10:34	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	581077	11/19/19 21:39	WC	TAL IRV
Total/NA	Prep	3520C			1025 mL	2.0 mL	581183	11/20/19 09:19	NAM	TAL IRV
Total/NA	Analysis	8270C		1			581738	11/22/19 13:07	HN	TAL IRV
Total/NA	Prep	3520C			1015 mL	1.0 mL	580937	11/19/19 08:01	NAM	TAL IRV
Total/NA	Analysis	8270C SIM		1			581174	11/20/19 10:08	L1B	TAL IRV
Total/NA	Analysis	SM 4500 H+ B		1			580797	11/18/19 14:51	ST	TAL IRV
Dissolved	Prep	SM 4500 S2 B			7.5 mL	7.5 mL	581088	11/19/19 17:09	KMY	TAL IRV
Dissolved	Analysis	SM 4500 S2 D		1			581109	11/19/19 18:05	KMY	TAL IRV
Total/NA	Analysis	Field Sampling		1			580642	11/15/19 08:30	P1A	TAL IRV

## Laboratory References:

TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-580924/4**

**Matrix: Water**

**Analysis Batch: 580924**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chloroethyl vinyl ether	ND		2.0	ug/L			11/19/19 08:56	1
Acrolein	ND		5.0	ug/L			11/19/19 08:56	1
Acrylonitrile	ND		2.0	ug/L			11/19/19 08:56	1
Total Volatile Organic Compounds	ND		150	ug/L			11/19/19 08:56	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 130		11/19/19 08:56	1
4-Bromofluorobenzene (Surr)	103		80 - 120		11/19/19 08:56	1
Dibromofluoromethane (Surr)	95		76 - 132		11/19/19 08:56	1
Toluene-d8 (Surr)	113		80 - 128		11/19/19 08:56	1

**Lab Sample ID: LCS 440-580924/1002**

**Matrix: Water**

**Analysis Batch: 580924**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
2-Chloroethyl vinyl ether	25.0	16.1		ug/L		64	37 - 150
Acrolein	24.7	28.3		ug/L		114	10 - 145
Acrylonitrile	250	217		ug/L		87	48 - 140
Total Volatile Organic Compounds	5370	4150		ug/L		77	

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	94		76 - 132
Toluene-d8 (Surr)	109		80 - 128

**Lab Sample ID: 440-254703-B-1 MS**

**Matrix: Water**

**Analysis Batch: 580924**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.
2-Chloroethyl vinyl ether	ND	F2	10.0	6.28		ug/L		63	10 - 140
Acrolein	ND		9.88	9.29		ug/L		94	10 - 147
Acrylonitrile	ND		100	87.5		ug/L		87	38 - 144
Total Volatile Organic Compounds	ND		3770	3030		ug/L		80	

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	97		76 - 132
Toluene-d8 (Surr)	109		80 - 128

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-254703-C-1 MSD**

**Matrix: Water**

**Analysis Batch: 580924**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	Limits	RPD	RPD Limit
2-Chloroethyl vinyl ether	ND	F2	10.0	10.5	F2	ug/L		105	10 - 140	51	35
Acrolein	ND		9.88	8.80		ug/L		89	10 - 147	6	40
Acrylonitrile	ND		100	82.3		ug/L		82	38 - 144	6	40
Total Volatile Organic Compounds	ND		3770	2990		ug/L		79			1

**MSD MSD**

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	97		76 - 132
Toluene-d8 (Surr)	110		80 - 128

**Lab Sample ID: MB 440-581077/4**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L			11/19/19 18:44	1
1,1,1-Trichloroethane	ND		1.0	ug/L			11/19/19 18:44	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			11/19/19 18:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	ug/L			11/19/19 18:44	1
1,1,2-Trichloroethane	ND		1.0	ug/L			11/19/19 18:44	1
1,1-Dichloroethane	ND		1.0	ug/L			11/19/19 18:44	1
1,1-Dichloroethene	ND		1.0	ug/L			11/19/19 18:44	1
1,1-Dichloropropene	ND		1.0	ug/L			11/19/19 18:44	1
1,2,3-Trichlorobenzene	ND		1.0	ug/L			11/19/19 18:44	1
1,2,3-Trichloropropane	ND		1.0	ug/L			11/19/19 18:44	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			11/19/19 18:44	1
1,2,4-Trimethylbenzene	ND		1.0	ug/L			11/19/19 18:44	1
1,2-Dibromo-3-Chloropropane	ND		5.0	ug/L			11/19/19 18:44	1
1,2-Dibromoethane (EDB)	ND		1.0	ug/L			11/19/19 18:44	1
1,2-Dichlorobenzene	ND		1.0	ug/L			11/19/19 18:44	1
1,2-Dichloroethane	ND		1.0	ug/L			11/19/19 18:44	1
1,2-Dichloropropane	ND		1.0	ug/L			11/19/19 18:44	1
1,3,5-Trimethylbenzene	ND		1.0	ug/L			11/19/19 18:44	1
1,3-Dichlorobenzene	ND		1.0	ug/L			11/19/19 18:44	1
1,3-Dichloropropane	ND		1.0	ug/L			11/19/19 18:44	1
1,4-Dichlorobenzene	ND		1.0	ug/L			11/19/19 18:44	1
2,2-Dichloropropane	ND		1.0	ug/L			11/19/19 18:44	1
2-Chlorotoluene	ND		1.0	ug/L			11/19/19 18:44	1
4-Chlorotoluene	ND		1.0	ug/L			11/19/19 18:44	1
Acetone	ND		10	ug/L			11/19/19 18:44	1
Benzene	ND		0.50	ug/L			11/19/19 18:44	1
Bromobenzene	ND		1.0	ug/L			11/19/19 18:44	1
Bromochloromethane	ND		1.0	ug/L			11/19/19 18:44	1
Bromodichloromethane	ND		1.0	ug/L			11/19/19 18:44	1
Bromoform	ND		1.0	ug/L			11/19/19 18:44	1
Bromomethane	ND		1.0	ug/L			11/19/19 18:44	1

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** MB 440-581077/4

**Matrix:** Water

**Analysis Batch:** 581077

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		0.50	ug/L		11/19/19 18:44		1
Chlorobenzene	ND		1.0	ug/L		11/19/19 18:44		1
Chloroethane	ND		1.0	ug/L		11/19/19 18:44		1
Chloroform	ND		1.0	ug/L		11/19/19 18:44		1
Chloromethane	ND		1.0	ug/L		11/19/19 18:44		1
cis-1,2-Dichloroethene	ND		1.0	ug/L		11/19/19 18:44		1
cis-1,3-Dichloropropene	ND		0.50	ug/L		11/19/19 18:44		1
Dibromochloromethane	ND		1.0	ug/L		11/19/19 18:44		1
Dibromomethane	ND		1.0	ug/L		11/19/19 18:44		1
Dichlorodifluoromethane	ND		1.0	ug/L		11/19/19 18:44		1
Ethylbenzene	ND		1.0	ug/L		11/19/19 18:44		1
Hexachlorobutadiene	ND		1.0	ug/L		11/19/19 18:44		1
Isopropyl alcohol	ND		250	ug/L		11/19/19 18:44		1
Isopropylbenzene	ND		1.0	ug/L		11/19/19 18:44		1
m,p-Xylene	ND		1.0	ug/L		11/19/19 18:44		1
Methylene Chloride	ND		5.0	ug/L		11/19/19 18:44		1
Methyl-t-Butyl Ether (MTBE)	ND		1.0	ug/L		11/19/19 18:44		1
Naphthalene	ND		1.0	ug/L		11/19/19 18:44		1
n-Butylbenzene	ND		1.0	ug/L		11/19/19 18:44		1
N-Propylbenzene	ND		1.0	ug/L		11/19/19 18:44		1
o-Xylene	ND		1.0	ug/L		11/19/19 18:44		1
p-Isopropyltoluene	ND		1.0	ug/L		11/19/19 18:44		1
sec-Butylbenzene	ND		1.0	ug/L		11/19/19 18:44		1
Styrene	ND		1.0	ug/L		11/19/19 18:44		1
tert-Butylbenzene	ND		1.0	ug/L		11/19/19 18:44		1
Tetrachloroethene	ND		1.0	ug/L		11/19/19 18:44		1
Toluene	ND		1.0	ug/L		11/19/19 18:44		1
trans-1,2-Dichloroethene	ND		1.0	ug/L		11/19/19 18:44		1
trans-1,3-Dichloropropene	ND		0.50	ug/L		11/19/19 18:44		1
Trichloroethene	ND		1.0	ug/L		11/19/19 18:44		1
Trichlorofluoromethane	ND		1.0	ug/L		11/19/19 18:44		1
Vinyl chloride	ND		0.50	ug/L		11/19/19 18:44		1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 130		11/19/19 18:44	1
4-Bromofluorobenzene (Surr)	98		80 - 120		11/19/19 18:44	1
Dibromofluoromethane (Surr)	93		76 - 132		11/19/19 18:44	1
Toluene-d8 (Surr)	100		80 - 128		11/19/19 18:44	1

**Lab Sample ID:** LCS 440-581077/1002

**Matrix:** Water

**Analysis Batch:** 581077

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	25.0	21.7		ug/L		87	60 - 141
1,1,1-Trichloroethane	25.0	22.1		ug/L		88	70 - 130
1,1,2,2-Tetrachloroethane	25.0	24.7		ug/L		99	63 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	23.3		ug/L		93	60 - 140

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-581077/1002**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,1,2-Trichloroethane	25.0	26.7		ug/L		107	70 - 130
1,1-Dichloroethane	25.0	25.7		ug/L		103	64 - 130
1,1-Dichloroethene	25.0	23.1		ug/L		93	70 - 130
1,1-Dichloropropene	25.0	24.0		ug/L		96	70 - 130
1,2,3-Trichlorobenzene	25.0	20.7		ug/L		83	60 - 140
1,2,3-Trichloropropane	25.0	23.6		ug/L		95	63 - 130
1,2,4-Trichlorobenzene	25.0	21.6		ug/L		87	60 - 140
1,2,4-Trimethylbenzene	25.0	24.0		ug/L		96	70 - 135
1,2-Dibromo-3-Chloropropane	25.0	20.5		ug/L		82	52 - 140
1,2-Dibromoethane (EDB)	25.0	23.6		ug/L		95	70 - 130
1,2-Dichlorobenzene	25.0	21.8		ug/L		87	70 - 130
1,2-Dichloroethane	25.0	22.7		ug/L		91	57 - 138
1,2-Dichloropropane	25.0	27.3		ug/L		109	67 - 130
1,3,5-Trimethylbenzene	25.0	23.7		ug/L		95	70 - 136
1,3-Dichlorobenzene	25.0	22.6		ug/L		91	70 - 130
1,3-Dichloropropane	25.0	25.9		ug/L		104	70 - 130
1,4-Dichlorobenzene	25.0	23.2		ug/L		93	70 - 130
2,2-Dichloropropane	25.0	21.8		ug/L		87	68 - 141
2-Chlorotoluene	25.0	24.1		ug/L		96	70 - 130
4-Chlorotoluene	25.0	25.8		ug/L		103	70 - 130
Acetone	125	118		ug/L		95	10 - 150
Benzene	25.0	25.4		ug/L		101	68 - 130
Bromobenzene	25.0	24.7		ug/L		99	70 - 130
Bromochloromethane	25.0	22.4		ug/L		89	70 - 130
Bromodichloromethane	25.0	25.0		ug/L		100	70 - 132
Bromoform	25.0	26.1		ug/L		104	60 - 148
Bromomethane	25.0	23.2		ug/L		93	64 - 139
Carbon tetrachloride	25.0	22.0		ug/L		88	60 - 150
Chlorobenzene	25.0	24.4		ug/L		98	70 - 130
Chloroethane	25.0	24.1		ug/L		96	64 - 135
Chloroform	25.0	22.9		ug/L		92	70 - 130
Chloromethane	25.0	21.9		ug/L		88	47 - 140
cis-1,2-Dichloroethene	25.0	24.6		ug/L		98	70 - 133
cis-1,3-Dichloropropene	25.0	24.8		ug/L		99	70 - 133
Dibromochloromethane	25.0	24.1		ug/L		96	69 - 145
Dibromomethane	25.0	25.6		ug/L		102	70 - 130
Dichlorodifluoromethane	25.0	18.5		ug/L		74	29 - 150
Ethylbenzene	25.0	25.0		ug/L		100	70 - 130
Hexachlorobutadiene	25.0	21.1		ug/L		84	10 - 150
Isopropylbenzene	25.0	23.6		ug/L		94	70 - 136
m,p-Xylene	25.0	24.7		ug/L		99	70 - 130
Methylene Chloride	25.0	22.1		ug/L		89	52 - 130
Methyl-t-Butyl Ether (MTBE)	25.0	22.8		ug/L		91	63 - 131
Naphthalene	25.0	19.0		ug/L		76	60 - 140
n-Butylbenzene	25.0	23.6		ug/L		94	65 - 150
N-Propylbenzene	25.0	24.6		ug/L		98	67 - 139
o-Xylene	25.0	24.2		ug/L		97	70 - 130
p-Isopropyltoluene	25.0	22.0		ug/L		88	70 - 132
sec-Butylbenzene	25.0	23.4		ug/L		93	70 - 138

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-581077/1002**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Styrene	25.0	25.8		ug/L		103	70 - 134
tert-Butylbenzene	25.0	22.0		ug/L		88	70 - 130
Tetrachloroethene	25.0	22.8		ug/L		91	70 - 130
Toluene	25.0	24.5		ug/L		98	70 - 130
trans-1,2-Dichloroethene	25.0	24.6		ug/L		98	70 - 130
trans-1,3-Dichloropropene	25.0	25.1		ug/L		101	70 - 132
Trichloroethene	25.0	23.7		ug/L		95	70 - 130
Trichlorofluoromethane	25.0	20.4		ug/L		82	60 - 150
Vinyl chloride	25.0	21.6		ug/L		87	59 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	91		76 - 132
Toluene-d8 (Surr)	95		80 - 128

**Lab Sample ID: LCS 440-581077/1003**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

**Lab Sample ID: 440-254876-E-1 MS**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,1,1,2-Tetrachloroethane	ND		10.0	8.44		ug/L		84	60 - 149
1,1,1-Trichloroethane	ND		10.0	8.67		ug/L		87	70 - 130
1,1,2,2-Tetrachloroethane	ND		10.0	9.55		ug/L		96	63 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	8.93		ug/L		89	60 - 140
1,1,2-Trichloroethane	ND		10.0	9.93		ug/L		99	70 - 130
1,1-Dichloroethane	ND		10.0	9.39		ug/L		94	65 - 130
1,1-Dichloroethene	ND		10.0	9.23		ug/L		92	70 - 130
1,1-Dichloropropene	ND		10.0	9.04		ug/L		90	64 - 130
1,2,3-Trichlorobenzene	ND		10.0	7.88		ug/L		79	60 - 140
1,2,3-Trichloropropane	ND		10.0	9.73		ug/L		97	60 - 130
1,2,4-Trichlorobenzene	ND		10.0	8.38		ug/L		84	60 - 140
1,2,4-Trimethylbenzene	ND		10.0	9.94		ug/L		99	70 - 130
1,2-Dibromo-3-Chloropropane	ND		10.0	7.83		ug/L		78	48 - 140

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-254876-E-1 MS**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,2-Dibromoethane (EDB)	ND		10.0	8.67		ug/L	87	70 - 131	
1,2-Dichlorobenzene	ND		10.0	8.62		ug/L	86	70 - 130	
1,2-Dichloroethane	ND		10.0	8.70		ug/L	87	56 - 146	
1,2-Dichloropropane	ND		10.0	10.3		ug/L	103	69 - 130	
1,3,5-Trimethylbenzene	ND		10.0	9.45		ug/L	94	70 - 130	
1,3-Dichlorobenzene	ND		10.0	9.02		ug/L	90	70 - 130	
1,3-Dichloropropane	ND		10.0	9.85		ug/L	99	70 - 130	
1,4-Dichlorobenzene	ND		10.0	8.98		ug/L	90	70 - 130	
2,2-Dichloropropane	ND		10.0	8.17		ug/L	82	69 - 138	
2-Chlorotoluene	ND		10.0	9.71		ug/L	97	70 - 130	
4-Chlorotoluene	ND		10.0	10.1		ug/L	101	70 - 130	
Acetone	ND		50.0	45.6		ug/L	91	10 - 150	
Benzene	ND		10.0	9.56		ug/L	96	66 - 130	
Bromobenzene	ND		10.0	9.24		ug/L	92	70 - 130	
Bromochloromethane	ND		10.0	8.61		ug/L	86	70 - 130	
Bromodichloromethane	ND		10.0	9.71		ug/L	97	70 - 138	
Bromoform	ND		10.0	10.6		ug/L	106	59 - 150	
Bromomethane	ND		10.0	8.22		ug/L	82	62 - 131	
Carbon tetrachloride	ND		10.0	8.29		ug/L	83	60 - 150	
Chlorobenzene	ND		10.0	9.33		ug/L	93	70 - 130	
Chloroethane	ND		10.0	8.74		ug/L	87	68 - 130	
Chloroform	ND		10.0	8.56		ug/L	86	70 - 130	
Chloromethane	ND		10.0	7.57		ug/L	76	39 - 144	
cis-1,2-Dichloroethene	ND		10.0	9.36		ug/L	94	70 - 130	
cis-1,3-Dichloropropene	ND		10.0	9.61		ug/L	96	70 - 133	
Dibromochloromethane	ND		10.0	9.42		ug/L	94	70 - 148	
Dibromomethane	ND		10.0	9.53		ug/L	95	70 - 130	
Dichlorodifluoromethane	ND		10.0	7.32		ug/L	73	25 - 142	
Ethylbenzene	ND		10.0	9.54		ug/L	95	70 - 130	
Hexachlorobutadiene	ND		10.0	8.31		ug/L	83	10 - 150	
Isopropyl alcohol	ND		250	345		ug/L	138	46 - 142	
Isopropylbenzene	ND		10.0	9.57		ug/L	96	70 - 132	
m,p-Xylene	ND		10.0	9.76		ug/L	98	70 - 133	
Methylene Chloride	ND		10.0	8.22		ug/L	82	52 - 130	
Methyl-t-Butyl Ether (MTBE)	ND		10.0	8.74		ug/L	87	70 - 130	
Naphthalene	ND		10.0	7.05		ug/L	71	60 - 140	
n-Butylbenzene	ND		10.0	9.68		ug/L	97	61 - 149	
N-Propylbenzene	ND		10.0	9.83		ug/L	98	66 - 135	
o-Xylene	ND		10.0	9.66		ug/L	97	70 - 133	
p-Isopropyltoluene	ND		10.0	8.77		ug/L	88	70 - 130	
sec-Butylbenzene	ND		10.0	9.29		ug/L	93	67 - 134	
Styrene	ND		10.0	10.4		ug/L	101	29 - 150	
tert-Butylbenzene	ND		10.0	8.57		ug/L	86	70 - 130	
Tetrachloroethene	ND		10.0	8.84		ug/L	88	70 - 137	
Toluene	ND		10.0	9.94		ug/L	93	70 - 130	
trans-1,2-Dichloroethene	ND		10.0	8.75		ug/L	87	70 - 130	
trans-1,3-Dichloropropene	ND		10.0	9.92		ug/L	99	70 - 138	
Trichloroethene	ND		10.0	9.42		ug/L	94	70 - 130	
Trichlorofluoromethane	ND		10.0	7.92		ug/L	79	60 - 150	

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-254876-E-1 MS**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	ND		10.0	8.05		ug/L		80	50 - 137
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	97		70 - 130						
4-Bromofluorobenzene (Surr)	101		80 - 120						
Dibromofluoromethane (Surr)	93		76 - 132						
Toluene-d8 (Surr)	101		80 - 128						

**Lab Sample ID: 440-254876-E-1 MSD**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		10.0	9.29		ug/L		93	60 - 149	10	20
1,1,1-Trichloroethane	ND		10.0	9.58		ug/L		96	70 - 130	10	20
1,1,2,2-Tetrachloroethane	ND		10.0	10.6		ug/L		106	63 - 130	10	30
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	10.2		ug/L		102	60 - 140	13	20
1,1,2-Trichloroethane	ND		10.0	10.9		ug/L		109	70 - 130	9	25
1,1-Dichloroethane	ND		10.0	10.7		ug/L		107	65 - 130	13	20
1,1-Dichloroethene	ND		10.0	9.85		ug/L		99	70 - 130	7	20
1,1-Dichloropropene	ND		10.0	10.2		ug/L		102	64 - 130	12	20
1,2,3-Trichlorobenzene	ND		10.0	8.72		ug/L		87	60 - 140	10	20
1,2,3-Trichloropropane	ND		10.0	9.97		ug/L		100	60 - 130	2	30
1,2,4-Trichlorobenzene	ND		10.0	9.32		ug/L		93	60 - 140	11	20
1,2,4-Trimethylbenzene	ND		10.0	10.8		ug/L		108	70 - 130	8	25
1,2-Dibromo-3-Chloropropane	ND		10.0	9.53		ug/L		95	48 - 140	20	30
1,2-Dibromoethane (EDB)	ND		10.0	10.5		ug/L		105	70 - 131	19	25
1,2-Dichlorobenzene	ND		10.0	9.34		ug/L		93	70 - 130	8	20
1,2-Dichloroethane	ND		10.0	10.0		ug/L		100	56 - 146	14	20
1,2-Dichloropropane	ND		10.0	11.3		ug/L		113	69 - 130	10	20
1,3,5-Trimethylbenzene	ND		10.0	10.3		ug/L		103	70 - 130	9	20
1,3-Dichlorobenzene	ND		10.0	9.85		ug/L		98	70 - 130	9	20
1,3-Dichloropropane	ND		10.0	11.0		ug/L		110	70 - 130	11	25
1,4-Dichlorobenzene	ND		10.0	10.1		ug/L		101	70 - 130	12	20
2,2-Dichloropropane	ND		10.0	10.3		ug/L		103	69 - 138	23	25
2-Chlorotoluene	ND		10.0	10.4		ug/L		104	70 - 130	7	20
4-Chlorotoluene	ND		10.0	11.1		ug/L		111	70 - 130	10	20
Acetone	ND		50.0	54.4		ug/L		109	10 - 150	18	35
Benzene	ND		10.0	10.5		ug/L		105	66 - 130	9	20
Bromobenzene	ND		10.0	10.5		ug/L		105	70 - 130	12	20
Bromochloromethane	ND		10.0	9.58		ug/L		96	70 - 130	11	25
Bromodichloromethane	ND		10.0	11.3		ug/L		113	70 - 138	15	20
Bromoform	ND		10.0	12.1		ug/L		121	59 - 150	13	25
Bromomethane	ND		10.0	8.90		ug/L		89	62 - 131	8	25
Carbon tetrachloride	ND		10.0	9.20		ug/L		92	60 - 150	10	25
Chlorobenzene	ND		10.0	10.2		ug/L		102	70 - 130	9	20
Chloroethane	ND		10.0	10.6		ug/L		106	68 - 130	20	25
Chloroform	ND		10.0	9.40		ug/L		94	70 - 130	9	20

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-254876-E-1 MSD**

**Matrix: Water**

**Analysis Batch: 581077**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	RPD Limit
Chloromethane	ND		10.0	8.50		ug/L	85	39 - 144	12	25
cis-1,2-Dichloroethene	ND		10.0	10.3		ug/L	103	70 - 130	9	20
cis-1,3-Dichloropropene	ND		10.0	10.8		ug/L	108	70 - 133	11	20
Dibromochloromethane	ND		10.0	10.6		ug/L	106	70 - 148	12	25
Dibromomethane	ND		10.0	10.9		ug/L	109	70 - 130	13	25
Dichlorodifluoromethane	ND		10.0	8.73		ug/L	87	25 - 142	18	30
Ethylbenzene	ND		10.0	10.8		ug/L	108	70 - 130	12	20
Hexachlorobutadiene	ND		10.0	9.54		ug/L	95	10 - 150	14	20
Isopropyl alcohol	ND		250	290		ug/L	116	46 - 142	17	40
Isopropylbenzene	ND		10.0	10.5		ug/L	105	70 - 132	9	20
m,p-Xylene	ND		10.0	10.8		ug/L	108	70 - 133	10	25
Methylene Chloride	ND		10.0	9.06		ug/L	91	52 - 130	10	20
Methyl-t-Butyl Ether (MTBE)	ND		10.0	9.41		ug/L	94	70 - 130	7	25
Naphthalene	ND		10.0	8.37		ug/L	84	60 - 140	17	30
n-Butylbenzene	ND		10.0	10.0		ug/L	100	61 - 149	3	20
N-Propylbenzene	ND		10.0	10.8		ug/L	108	66 - 135	9	20
o-Xylene	ND		10.0	10.5		ug/L	105	70 - 133	8	20
p-Isopropyltoluene	ND		10.0	9.65		ug/L	96	70 - 130	10	20
sec-Butylbenzene	ND		10.0	10.2		ug/L	102	67 - 134	9	20
Styrene	ND		10.0	11.0		ug/L	107	29 - 150	6	35
tert-Butylbenzene	ND		10.0	9.32		ug/L	93	70 - 130	8	20
Tetrachloroethene	ND		10.0	9.91		ug/L	99	70 - 137	11	20
Toluene	ND		10.0	10.9		ug/L	102	70 - 130	9	20
trans-1,2-Dichloroethene	ND		10.0	9.66		ug/L	97	70 - 130	10	20
trans-1,3-Dichloropropene	ND		10.0	10.8		ug/L	108	70 - 138	9	25
Trichloroethene	ND		10.0	9.81		ug/L	98	70 - 130	4	20
Trichlorofluoromethane	ND		10.0	9.06		ug/L	91	60 - 150	13	25
Vinyl chloride	ND		10.0	8.59		ug/L	86	50 - 137	6	30
<b>Surrogate</b>		<b>MSD</b>	<b>MSD</b>							
		<b>%Recovery</b>	<b>Qualifier</b>			<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)		100				70 - 130				
4-Bromofluorobenzene (Surr)		100				80 - 120				
Dibromofluoromethane (Surr)		96				76 - 132				
Toluene-d8 (Surr)		96				80 - 128				

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-581183/1-A**

**Matrix: Water**

**Analysis Batch: 581738**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 581183**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
1,2-Dichlorobenzene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
1,2-Diphenylhydrazine(as Azobenzene)	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
1,3-Dichlorobenzene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
1,4-Dichlorobenzene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2,4,5-Trichlorophenol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-581183/1-A**

**Matrix: Water**

**Analysis Batch: 581738**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 581183**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
2,4-Dichlorophenol	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2,4-Dimethylphenol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
2,4-Dinitrophenol	ND		40	ug/L	11/20/19 07:48	11/22/19 11:05		1
2,4-Dinitrotoluene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2,6-Dinitrotoluene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2-Chloronaphthalene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2-Chlorophenol	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2-Methylnaphthalene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2-Methylphenol	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
2-Nitroaniline	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
2-Nitrophenol	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
3,3'-Dichlorobenzidine	ND		40	ug/L	11/20/19 07:48	11/22/19 11:05		1
3-Methylphenol + 4-Methylphenol	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
3-Nitroaniline	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
4,6-Dinitro-2-methylphenol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
4-Bromophenyl phenyl ether	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
4-Chloro-3-methylphenol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
4-Chloroaniline	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
4-Chlorophenyl phenyl ether	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
4-Nitroaniline	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
4-Nitrophenol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Acenaphthene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Acenaphthylene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Aniline	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Anthracene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzidine	ND		40	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzo[a]anthracene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzo[a]pyrene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzo[b]fluoranthene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzo[g,h,i]perylene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzo[k]fluoranthene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzoic acid	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Benzyl alcohol	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
bis (2-chloroisopropyl) ether	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Bis(2-chloroethoxy)methane	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Bis(2-chloroethyl)ether	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Bis(2-ethylhexyl) phthalate	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Butyl benzyl phthalate	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Chrysene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Dibenz(a,h)anthracene	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Dibenzofuran	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Diethyl phthalate	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Dimethyl phthalate	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Di-n-butyl phthalate	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Di-n-octyl phthalate	ND		20	ug/L	11/20/19 07:48	11/22/19 11:05		1
Fluoranthene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Fluorene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1
Hexachlorobenzene	ND		10	ug/L	11/20/19 07:48	11/22/19 11:05		1

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** MB 440-581183/1-A

**Matrix:** Water

**Analysis Batch:** 581738

**Client Sample ID:** Method Blank

**Prep Type:** Total/NA

**Prep Batch:** 581183

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Hexachlorocyclopentadiene	ND		20	ug/L		11/20/19 07:48	11/22/19 11:05	1
Hexachloroethane	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Indeno[1,2,3-cd]pyrene	ND		20	ug/L		11/20/19 07:48	11/22/19 11:05	1
Isophorone	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Naphthalene	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Nitrobenzene	ND		20	ug/L		11/20/19 07:48	11/22/19 11:05	1
N-Nitrosodimethylamine	ND		20	ug/L		11/20/19 07:48	11/22/19 11:05	1
N-Nitrosodi-n-propylamine	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
N-Nitrosodiphenylamine	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Pentachlorophenol	ND		20	ug/L		11/20/19 07:48	11/22/19 11:05	1
Phenanthrene	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Phenol	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1
Pyrene	ND		10	ug/L		11/20/19 07:48	11/22/19 11:05	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surrogate)	84		40 - 120		11/20/19 07:48	11/22/19 11:05
2-Fluorobiphenyl	81		50 - 120		11/20/19 07:48	11/22/19 11:05
2-Fluorophenol (Surrogate)	65		30 - 120		11/20/19 07:48	11/22/19 11:05
Nitrobenzene-d5 (Surrogate)	69		45 - 120		11/20/19 07:48	11/22/19 11:05
Phenol-d6 (Surrogate)	62		35 - 120		11/20/19 07:48	11/22/19 11:05
Terphenyl-d14 (Surrogate)	91		10 - 150		11/20/19 07:48	11/22/19 11:05

**Lab Sample ID:** LCS 440-581183/2-A

**Matrix:** Water

**Analysis Batch:** 581738

**Client Sample ID:** Lab Control Sample

**Prep Type:** Total/NA

**Prep Batch:** 581183

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2,4-Trichlorobenzene	100	75.3		ug/L		75	25 - 84
1,2-Dichlorobenzene	100	70.5		ug/L		70	24 - 85
1,2-Diphenylhydrazine(as Azobenzene)	100	76.2		ug/L		76	44 - 113
1,3-Dichlorobenzene	100	67.4		ug/L		67	20 - 80
1,4-Dichlorobenzene	100	69.1		ug/L		69	22 - 81
2,4,5-Trichlorophenol	100	89.2		ug/L		89	24 - 121
2,4,6-Trichlorophenol	100	88.0		ug/L		88	20 - 121
2,4-Dichlorophenol	100	81.7		ug/L		82	23 - 113
2,4-Dimethylphenol	100	73.0		ug/L		73	39 - 94
2,4-Dinitrophenol	200	168		ug/L		84	23 - 134
2,4-Dinitrotoluene	100	90.9		ug/L		91	54 - 115
2,6-Dinitrotoluene	100	87.5		ug/L		88	50 - 115
2-Chloronaphthalene	100	87.7		ug/L		88	34 - 102
2-Chlorophenol	100	74.3		ug/L		74	20 - 106
2-Methylnaphthalene	100	77.3		ug/L		77	34 - 98
2-Methylphenol	100	70.8		ug/L		71	36 - 103
2-Nitroaniline	100	76.8		ug/L		77	48 - 111
2-Nitrophenol	100	87.3		ug/L		87	20 - 117
3,3'-Dichlorobenzidine	100	83.9		ug/L		84	22 - 97
3-Methylphenol + 4-Methylphenol	100	77.1		ug/L		77	35 - 106

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-581183/2-A**

**Matrix: Water**

**Analysis Batch: 581738**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 581183**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
3-Nitroaniline	100	78.6		ug/L	79	51 - 116		
4,6-Dinitro-2-methylphenol	200	161		ug/L	81	28 - 139		
4-Bromophenyl phenyl ether	100	84.1		ug/L	84	42 - 113		
4-Chloro-3-methylphenol	100	76.5		ug/L	76	44 - 110		
4-Chloroaniline	100	72.6		ug/L	73	42 - 109		
4-Chlorophenyl phenyl ether	100	90.5		ug/L	90	38 - 115		
4-Nitroaniline	100	86.8		ug/L	87	50 - 116		
4-Nitrophenol	200	161		ug/L	81	26 - 132		
Acenaphthene	100	79.9		ug/L	80	37 - 107		
Acenaphthylene	100	81.0		ug/L	81	39 - 107		
Aniline	100	65.9		ug/L	66	27 - 115		
Anthracene	100	85.3		ug/L	85	42 - 120		
Benzidine	100	ND *		ug/L	2	5 - 150		
Benzo[a]anthracene	100	92.7		ug/L	93	42 - 115		
Benzo[a]pyrene	100	84.6		ug/L	85	41 - 117		
Benzo[b]fluoranthene	100	86.5		ug/L	87	36 - 113		
Benzo[g,h,i]perylene	100	86.3		ug/L	86	37 - 115		
Benzo[k]fluoranthene	100	86.8		ug/L	87	42 - 122		
Benzoic acid	100	90.5		ug/L	91	15 - 121		
Benzyl alcohol	100	72.8		ug/L	73	39 - 106		
bis (2-chloroisopropyl) ether	100	55.0		ug/L	55	38 - 104		
Bis(2-chloroethoxy)methane	100	74.8		ug/L	75	47 - 104		
Bis(2-chloroethyl)ether	100	69.8		ug/L	70	42 - 99		
Bis(2-ethylhexyl) phthalate	100	90.4		ug/L	90	43 - 124		
Butyl benzyl phthalate	100	93.8		ug/L	94	44 - 122		
Chrysene	100	95.4		ug/L	95	42 - 118		
Dibenz(a,h)anthracene	100	86.1		ug/L	86	40 - 114		
Dibenzofuran	100	83.7		ug/L	84	37 - 113		
Diethyl phthalate	100	87.1		ug/L	87	51 - 120		
Dimethyl phthalate	100	88.5		ug/L	88	49 - 113		
Di-n-butyl phthalate	100	86.2		ug/L	86	47 - 125		
Di-n-octyl phthalate	100	93.2		ug/L	93	42 - 125		
Fluoranthene	100	87.5		ug/L	87	44 - 119		
Fluorene	100	86.7		ug/L	87	39 - 116		
Hexachlorobenzene	100	84.6		ug/L	85	43 - 112		
Hexachlorobutadiene	100	66.4		ug/L	66	14 - 77		
Hexachlorocyclopentadiene	100	43.3		ug/L	43	10 - 77		
Hexachloroethane	100	64.5		ug/L	65	13 - 75		
Indeno[1,2,3-cd]pyrene	100	82.9		ug/L	83	35 - 116		
Isophorone	100	74.7		ug/L	75	48 - 107		
Naphthalene	100	76.8		ug/L	77	33 - 95		
Nitrobenzene	100	68.4		ug/L	68	42 - 99		
N-Nitrosodimethylamine	100	61.6		ug/L	62	35 - 96		
N-Nitrosodi-n-propylamine	100	71.3		ug/L	71	44 - 111		
N-Nitrosodiphenylamine	100	88.2		ug/L	88	46 - 116		
Pentachlorophenol	200	145		ug/L	73	26 - 136		
Phenanthrene	100	85.3		ug/L	85	43 - 120		
Phenol	100	72.5		ug/L	72	25 - 99		
Pyrene	100	93.4		ug/L	93	43 - 119		

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

<b>Surrogate</b>	<b>LCS</b>	<b>LCS</b>	
	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>
2,4,6-Tribromophenol (Surr)	86		40 - 120
2-Fluorobiphenyl	80		50 - 120
2-Fluorophenol (Surr)	67		30 - 120
Nitrobenzene-d5 (Surr)	72		45 - 120
Phenol-d6 (Surr)	67		35 - 120
Terphenyl-d14 (Surr)	94		10 - 150

**Lab Sample ID: 550-133382-D-11-A MS**

**Matrix: Water**

**Analysis Batch: 581738**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 581183**

<b>Analyte</b>	<b>Sample Result</b>	<b>Sample Qualifier</b>	<b>Spike Added</b>	<b>MS Result</b>	<b>MS Qualifier</b>	<b>Unit</b>	<b>D</b>	<b>%Rec</b>	<b>%Rec.</b>	<b>Limits</b>
1,2,4-Trichlorobenzene	ND		109	69.5		ug/L		64	45 - 120	
1,2-Dichlorobenzene	ND		109	60.8		ug/L		56	40 - 120	
1,2-Diphenylhydrazine(as Azobenzene)	ND		109	81.2		ug/L		74	60 - 120	
1,3-Dichlorobenzene	ND		109	55.1		ug/L		50	35 - 120	
1,4-Dichlorobenzene	ND		109	57.6		ug/L		53	35 - 120	
2,4,5-Trichlorophenol	ND		109	95.1		ug/L		87	55 - 120	
2,4,6-Trichlorophenol	ND		109	93.9		ug/L		86	55 - 120	
2,4-Dichlorophenol	ND		109	90.4		ug/L		83	55 - 120	
2,4-Dimethylphenol	32		109	120		ug/L		80	40 - 120	
2,4-Dinitrophenol	ND		219	204		ug/L		93	40 - 120	
2,4-Dinitrotoluene	ND		109	101		ug/L		92	65 - 120	
2,6-Dinitrotoluene	ND		109	98.3		ug/L		90	65 - 120	
2-Chloronaphthalene	ND		109	90.0		ug/L		82	60 - 120	
2-Chlorophenol	ND		109	82.3		ug/L		75	45 - 120	
2-Methylnaphthalene	ND		109	83.1		ug/L		70	55 - 120	
2-Methylphenol	ND		109	80.6		ug/L		71	50 - 120	
2-Nitroaniline	ND		109	86.0		ug/L		79	65 - 120	
2-Nitrophenol	ND		109	93.3		ug/L		85	50 - 120	
3,3'-Dichlorobenzidine	ND F1		109	ND F1		ug/L		0	45 - 135	
3-Methylphenol + 4-Methylphenol	ND		109	88.7		ug/L		78	50 - 120	
3-Nitroaniline	ND F1		109	66.6		ug/L		61	60 - 120	
4,6-Dinitro-2-methylphenol	ND		219	195		ug/L		89	45 - 120	
4-Bromophenyl phenyl ether	ND		109	85.2		ug/L		78	60 - 120	
4-Chloro-3-methylphenol	ND		109	85.5		ug/L		78	60 - 120	
4-Chloroaniline	ND		109	71.6		ug/L		66	55 - 120	
4-Chlorophenyl phenyl ether	ND		109	91.7		ug/L		84	65 - 120	
4-Nitroaniline	ND		109	93.1		ug/L		85	55 - 125	
4-Nitrophenol	ND		219	181		ug/L		83	45 - 120	
Acenaphthene	ND		109	83.2		ug/L		76	60 - 120	
Acenaphthylene	ND		109	80.9		ug/L		74	60 - 120	
Aniline	ND		109	69.1		ug/L		63	35 - 120	
Anthracene	ND		109	91.9		ug/L		84	65 - 120	
Benzidine	ND F1 *		109	ND F1		ug/L		0	30 - 160	
Benzo[a]anthracene	ND		109	100		ug/L		92	65 - 120	
Benzo[a]pyrene	ND		109	90.5		ug/L		83	55 - 130	
Benzo[b]fluoranthene	ND		109	92.9		ug/L		85	55 - 125	
Benzo[g,h,i]perylene	ND		109	100		ug/L		92	45 - 135	
Benzo[k]fluoranthene	ND		109	90.7		ug/L		83	55 - 125	
Benzoic acid	ND		109	119		ug/L		94	25 - 125	

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 550-133382-D-11-A MS**

**Matrix: Water**

**Analysis Batch: 581738**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 581183**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.	Limits
Benzyl alcohol	ND		109	91.9		ug/L		84	40 - 120	
bis (2-chloroisopropyl) ether	ND		109	59.8		ug/L		55	45 - 120	
Bis(2-chloroethoxy)methane	ND		109	81.5		ug/L		75	50 - 120	
Bis(2-chloroethyl)ether	ND		109	77.8		ug/L		71	50 - 120	
Bis(2-ethylhexyl) phthalate	ND		109	97.0		ug/L		89	44 - 124	
Butyl benzyl phthalate	ND		109	96.3		ug/L		88	55 - 130	
Chrysene	ND		109	101		ug/L		92	65 - 120	
Dibenz(a,h)anthracene	ND		109	95.7		ug/L		88	45 - 135	
Dibenzofuran	ND		109	86.6		ug/L		79	65 - 120	
Diethyl phthalate	ND		109	93.0		ug/L		85	55 - 120	
Dimethyl phthalate	ND		109	91.1		ug/L		83	30 - 120	
Di-n-butyl phthalate	ND		109	91.8		ug/L		84	60 - 125	
Di-n-octyl phthalate	ND		109	97.9		ug/L		90	65 - 135	
Fluoranthene	ND		109	93.1		ug/L		85	60 - 120	
Fluorene	ND		109	91.2		ug/L		83	65 - 120	
Hexachlorobenzene	ND		109	86.4		ug/L		79	60 - 120	
Hexachlorobutadiene	ND		109	50.2		ug/L		46	40 - 120	
Hexachlorocyclopentadiene	ND		109	41.4		ug/L		38	25 - 120	
Hexachloroethane	ND		109	59.3		ug/L		54	35 - 120	
Indeno[1,2,3-cd]pyrene	ND		109	93.5		ug/L		86	40 - 135	
Isophorone	ND		109	79.3		ug/L		73	50 - 120	
Naphthalene	57		109	133		ug/L		69	55 - 120	
Nitrobenzene	ND		109	76.7		ug/L		70	55 - 120	
N-Nitrosodimethylamine	ND		109	67.0		ug/L		61	45 - 120	
N-Nitrosodi-n-propylamine	ND		109	76.2		ug/L		70	45 - 120	
N-Nitrosodiphenylamine	ND		109	84.5		ug/L		77	50 - 150	
Pentachlorophenol	ND		219	187		ug/L		85	24 - 121	
Phenanthren	ND		109	92.8		ug/L		85	65 - 120	
Phenol	12		109	92.2		ug/L		73	40 - 120	
Pyrene	ND		109	96.4		ug/L		88	55 - 125	

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	86		40 - 120
2-Fluorobiphenyl	76		50 - 120
2-Fluorophenol (Surr)	65		30 - 120
Nitrobenzene-d5 (Surr)	72		45 - 120
Phenol-d6 (Surr)	67		35 - 120
Terphenyl-d14 (Surr)	70		10 - 150

**Lab Sample ID: 550-133382-D-11-B MSD**

**Matrix: Water**

**Analysis Batch: 581738**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

**Prep Batch: 581183**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.	RPD	Limit
1,2,4-Trichlorobenzene	ND		109	67.1		ug/L		62	45 - 120	4	20
1,2-Dichlorobenzene	ND		109	61.9		ug/L		57	40 - 120	2	25
1,2-Diphenylhydrazine(as Azobenzene)	ND		109	79.6		ug/L		73	60 - 120	2	25
1,3-Dichlorobenzene	ND		109	57.2		ug/L		53	35 - 120	4	25

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-133382-D-11-B MSD				Client Sample ID: Matrix Spike Duplicate						
Matrix: Water				Prep Type: Total/NA						
Analysis Batch: 581738				Prep Batch: 581183						
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	Limits	RPD RPD Limit
1,4-Dichlorobenzene	ND		109	59.4		ug/L	55	35 - 120	3	25
2,4,5-Trichlorophenol	ND		109	92.6		ug/L	85	55 - 120	3	30
2,4,6-Trichlorophenol	ND		109	90.8		ug/L	84	55 - 120	3	30
2,4-Dichlorophenol	ND		109	87.2		ug/L	80	55 - 120	4	25
2,4-Dimethylphenol	32		109	112		ug/L	73	40 - 120	7	25
2,4-Dinitrophenol	ND		217	211		ug/L	97	40 - 120	3	25
2,4-Dinitrotoluene	ND		109	99.2		ug/L	91	65 - 120	1	25
2,6-Dinitrotoluene	ND		109	95.0		ug/L	87	65 - 120	3	20
2-Chloronaphthalene	ND		109	87.2		ug/L	80	60 - 120	3	20
2-Chlorophenol	ND		109	79.8		ug/L	73	45 - 120	3	25
2-Methylnaphthalene	ND		109	78.6		ug/L	66	55 - 120	6	20
2-Methylphenol	ND		109	75.8		ug/L	67	50 - 120	6	25
2-Nitroaniline	ND		109	87.9		ug/L	81	65 - 120	2	25
2-Nitrophenol	ND		109	86.9		ug/L	80	50 - 120	7	25
3,3'-Dichlorobenzidine	ND F1		109	ND F1		ug/L	0	45 - 135	NC	25
3-Methylphenol + 4-Methylphenol	ND		109	84.9		ug/L	75	50 - 120	4	25
3-Nitroaniline	ND F1		109	57.7 F1		ug/L	53	60 - 120	14	25
4,6-Dinitro-2-methylphenol	ND		217	209		ug/L	96	45 - 120	7	25
4-Bromophenyl phenyl ether	ND		109	90.8		ug/L	84	60 - 120	6	25
4-Chloro-3-methylphenol	ND		109	83.5		ug/L	77	60 - 120	2	25
4-Chloroaniline	ND		109	60.0		ug/L	55	55 - 120	18	25
4-Chlorophenyl phenyl ether	ND		109	92.3		ug/L	85	65 - 120	1	25
4-Nitroaniline	ND		109	82.7		ug/L	76	55 - 125	12	25
4-Nitrophenol	ND		217	177		ug/L	81	45 - 120	2	30
Acenaphthene	ND		109	81.5		ug/L	75	60 - 120	2	25
Acenaphthylene	ND		109	78.8		ug/L	72	60 - 120	3	25
Aniline	ND		109	66.3		ug/L	61	35 - 120	4	30
Anthracene	ND		109	96.5		ug/L	89	65 - 120	5	25
Benzidine	ND F1 *		109	ND F1		ug/L	0	30 - 160	NC	35
Benzo[a]anthracene	ND		109	103		ug/L	95	65 - 120	3	20
Benzo[a]pyrene	ND		109	92.3		ug/L	85	55 - 130	2	25
Benzo[b]fluoranthene	ND		109	94.8		ug/L	87	55 - 125	2	25
Benzo[g,h,i]perylene	ND		109	102		ug/L	94	45 - 135	2	30
Benzo[k]fluoranthene	ND		109	92.8		ug/L	85	55 - 125	2	30
Benzoic acid	ND		109	113		ug/L	88	25 - 125	6	30
Benzyl alcohol	ND		109	87.3		ug/L	80	40 - 120	5	30
bis (2-chloroisopropyl) ether	ND		109	57.2		ug/L	53	45 - 120	5	25
Bis(2-chloroethoxy)methane	ND		109	77.3		ug/L	71	50 - 120	5	25
Bis(2-chloroethyl)ether	ND		109	75.0		ug/L	69	50 - 120	4	25
Bis(2-ethylhexyl) phthalate	ND		109	103		ug/L	94	44 - 124	6	25
Butyl benzyl phthalate	ND		109	101		ug/L	93	55 - 130	5	25
Chrysene	ND		109	104		ug/L	96	65 - 120	4	25
Dibenz(a,h)anthracene	ND		109	97.8		ug/L	90	45 - 135	2	30
Dibenzo furan	ND		109	84.6		ug/L	78	65 - 120	2	25
Diethyl phthalate	ND		109	94.5		ug/L	87	55 - 120	2	30
Dimethyl phthalate	ND		109	90.8		ug/L	84	30 - 120	0	30
Di-n-butyl phthalate	ND		109	97.4		ug/L	90	60 - 125	6	25
Di-n-octyl phthalate	ND		109	102		ug/L	94	65 - 135	4	20
Fluoranthene	ND		109	97.6		ug/L	90	60 - 120	5	25

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
 Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
 SDG: Whittier, CA

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-133382-D-11-B MSD				Client Sample ID: Matrix Spike Duplicate							
Matrix: Water				Prep Type: Total/NA							
Analysis Batch: 581738				Prep Batch: 581183							
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluorene	ND		109	91.8		ug/L		84	65 - 120	1	25
Hexachlorobenzene	ND		109	89.1		ug/L		82	60 - 120	3	25
Hexachlorobutadiene	ND		109	49.2		ug/L		45	40 - 120	2	25
Hexachlorocyclopentadiene	ND		109	43.8		ug/L		40	25 - 120	6	30
Hexachloroethane	ND		109	58.7		ug/L		54	35 - 120	1	25
Indeno[1,2,3-cd]pyrene	ND		109	96.9		ug/L		89	40 - 135	4	30
Isophorone	ND		109	77.1		ug/L		71	50 - 120	3	25
Naphthalene	57		109	122		ug/L		60	55 - 120	8	25
Nitrobenzene	ND		109	72.2		ug/L		66	55 - 120	6	25
N-Nitrosodimethylamine	ND		109	62.9		ug/L		58	45 - 120	6	25
N-Nitrosodi-n-propylamine	ND		109	75.6		ug/L		70	45 - 120	1	25
N-Nitrosodiphenylamine	ND		109	87.2		ug/L		80	50 - 150	3	25
Pentachlorophenol	ND		217	189		ug/L		87	24 - 121	1	25
Phenanthrene	ND		109	96.6		ug/L		89	65 - 120	4	25
Phenol	12		109	84.6		ug/L		67	40 - 120	9	25
Pyrene	ND		109	100		ug/L		92	55 - 125	4	25
Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits								
2,4,6-Tribromophenol (Surr)	87		40 - 120								
2-Fluorobiphenyl	73		50 - 120								
2-Fluorophenol (Surr)	61		30 - 120								
Nitrobenzene-d5 (Surr)	69		45 - 120								
Phenol-d6 (Surr)	61		35 - 120								
Terphenyl-d14 (Surr)	70		10 - 150								

## Method: 8270C SIM - 1,4 Dioxane by SIM

Lab Sample ID: MB 440-580937/1-A				Client Sample ID: Method Blank							
Matrix: Water				Prep Type: Total/NA							
Analysis Batch: 581174				Prep Batch: 580937							
Analyte	MB Result	MB Qualifier	MB RL		Unit	D	Prepared	Analyzed	Dil Fac		
1,4-Dioxane	ND		0.50		ug/L		11/19/19 08:01	11/20/19 08:43		1	
Surrogate	MB %Recovery	MB Qualifier	MB Limits				Prepared	Analyzed	Dil Fac		
1,4-Dioxane-d8 (Surr)	63		27 - 120				11/19/19 08:01	11/20/19 08:43		1	
Lab Sample ID: LCS 440-580937/2-A				Client Sample ID: Lab Control Sample							
Matrix: Water				Prep Type: Total/NA							
Analysis Batch: 581174				Prep Batch: 580937							
Analyte	LCS Spike Added	LCS Result	LCS Qualifier	LCS Unit	D	%Rec	%Rec.				
1,4-Dioxane	2.00	1.45		ug/L		73	36 - 120				
Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits								
1,4-Dioxane-d8 (Surr)	69		27 - 120								

Eurofins TestAmerica, Irvine

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Method: 8270C SIM - 1,4 Dioxane by SIM (Continued)

Lab Sample ID: LCSD 440-580937/3-A				Client Sample ID: Lab Control Sample Dup						
Matrix: Water				Prep Type: Total/NA						
Analysis Batch: 581174				Prep Batch: 580937						
Analyte		Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.	RPD	RPD Limit
1,4-Dioxane		2.00	1.38		ug/L		69	36 - 120	5	35
Surrogate		LCSD %Recovery	LCSD Qualifier	LCSD Limits						
1,4-Dioxane-d8 (Surr)		66		27 - 120						

## Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 440-580480/1				Client Sample ID: Method Blank						
Matrix: Water				Prep Type: Total/NA						
Analysis Batch: 580480										
Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac	
Total Suspended Solids	ND		1.0		mg/L			11/15/19 17:14		1

Lab Sample ID: LCS 440-580480/2				Client Sample ID: Lab Control Sample						
Matrix: Water				Prep Type: Total/NA						
Analysis Batch: 580480										
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits		
Total Suspended Solids	1000	1070		mg/L		107	85 - 115			

Lab Sample ID: 440-254630-A-1 DU				Client Sample ID: Duplicate						
Matrix: Water				Prep Type: Total/NA						
Analysis Batch: 580480										
Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D		RPD	RPD Limit
Total Suspended Solids	840			874		mg/L			3	10

Method: SM 4500 H+ B - pH				Client Sample ID: Duplicate						
Lab Sample ID: 440-254688-B-1 DU				Prep Type: Total/NA						
Matrix: Water										
Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D		RPD	RPD Limit
pH	8.1			8.1		SU			0.1	2

Method: SM 4500 S2 D - Sulfide, Total				Client Sample ID: Method Blank						
Lab Sample ID: MB 440-581088/1-A				Prep Type: Dissolved						
Matrix: Water										
Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac	
Sulfide, Dissolved	ND		0.050		mg/L		11/19/19 17:09	11/19/19 18:05		1

# QC Sample Results

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Method: SM 4500 S2 D - Sulfide, Total (Continued)

**Lab Sample ID: LCS 440-581088/2-A**

**Matrix: Water**

**Analysis Batch: 581109**

**Client Sample ID: Lab Control Sample**

**Prep Type: Dissolved**

**Prep Batch: 581088**

**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
Sulfide, Dissolved	0.500	0.480		mg/L	96	80 - 120	

**Lab Sample ID: 440-254649-2 MS**

**Matrix: Water**

**Analysis Batch: 581109**

**Client Sample ID: GRAB\_20191115**

**Prep Type: Dissolved**

**Prep Batch: 581088**

**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec.	Limits
Sulfide, Dissolved	ND	HF	0.500	0.506	HF	mg/L	101	70 - 130	

**Lab Sample ID: 440-254649-2 MSD**

**Matrix: Water**

**Analysis Batch: 581109**

**Client Sample ID: GRAB\_20191115**

**Prep Type: Dissolved**

**Prep Batch: 581088**

**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	Limit
Sulfide, Dissolved	ND	HF	0.500	0.466	HF	mg/L	93	70 - 130	8	30

## Method: SM 5220D - COD

**Lab Sample ID: MB 440-581224/3**

**Matrix: Water**

**Analysis Batch: 581224**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	mg/L			11/20/19 10:18	1

**Lab Sample ID: LCS 440-581224/4**

**Matrix: Water**

**Analysis Batch: 581224**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
Chemical Oxygen Demand	200	205		mg/L	102	90 - 110	

**Lab Sample ID: 720-96027-F-2 MS**

**Matrix: Water**

**Analysis Batch: 581224**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec.	Limits
Chemical Oxygen Demand	ND		200	208		mg/L	97	70 - 120	

**Lab Sample ID: 720-96027-F-2 MSD**

**Matrix: Water**

**Analysis Batch: 581224**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	Limit
Chemical Oxygen Demand	ND		200	212		mg/L	99	70 - 120	2	15

# QC Association Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## GC/MS VOA

### Analysis Batch: 580924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	8260B	
MB 440-580924/4	Method Blank	Total/NA	Water	8260B	
LCS 440-580924/1002	Lab Control Sample	Total/NA	Water	8260B	
440-254703-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-254703-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 581077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	8260B	
MB 440-581077/4	Method Blank	Total/NA	Water	8260B	
LCS 440-581077/1002	Lab Control Sample	Total/NA	Water	8260B	
LCS 440-581077/1003	Lab Control Sample	Total/NA	Water	8260B	
440-254876-E-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-254876-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 580937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	3520C	
MB 440-580937/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-580937/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-580937/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 581174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	8270C SIM	580937
MB 440-580937/1-A	Method Blank	Total/NA	Water	8270C SIM	580937
LCS 440-580937/2-A	Lab Control Sample	Total/NA	Water	8270C SIM	580937
LCSD 440-580937/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM	580937

### Prep Batch: 581183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	3520C	
MB 440-581183/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-581183/2-A	Lab Control Sample	Total/NA	Water	3520C	
550-133382-D-11-A MS	Matrix Spike	Total/NA	Water	3520C	
550-133382-D-11-B MSD	Matrix Spike Duplicate	Total/NA	Water	3520C	

### Analysis Batch: 581738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	8270C	581183
MB 440-581183/1-A	Method Blank	Total/NA	Water	8270C	581183
LCS 440-581183/2-A	Lab Control Sample	Total/NA	Water	8270C	581183
550-133382-D-11-A MS	Matrix Spike	Total/NA	Water	8270C	581183
550-133382-D-11-B MSD	Matrix Spike Duplicate	Total/NA	Water	8270C	581183

## General Chemistry

### Analysis Batch: 580480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-1	COMPOSITE_20191115	Total/NA	Water	SM 2540D	

Eurofins TestAmerica, Irvine

# QC Association Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## General Chemistry (Continued)

### Analysis Batch: 580480 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-580480/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 440-580480/2	Lab Control Sample	Total/NA	Water	SM 2540D	
440-254630-A-1 DU	Duplicate	Total/NA	Water	SM 2540D	

### Analysis Batch: 580797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	SM 4500 H+ B	
440-254688-B-1 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

### Prep Batch: 581088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Dissolved	Water	SM 4500 S2 B	
MB 440-581088/1-A	Method Blank	Dissolved	Water	SM 4500 S2 B	
LCS 440-581088/2-A	Lab Control Sample	Dissolved	Water	SM 4500 S2 B	
440-254649-2 MS	GRAB_20191115	Dissolved	Water	SM 4500 S2 B	
440-254649-2 MSD	GRAB_20191115	Dissolved	Water	SM 4500 S2 B	

### Analysis Batch: 581109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Dissolved	Water	SM 4500 S2 D	581088
MB 440-581088/1-A	Method Blank	Dissolved	Water	SM 4500 S2 D	581088
LCS 440-581088/2-A	Lab Control Sample	Dissolved	Water	SM 4500 S2 D	581088
440-254649-2 MS	GRAB_20191115	Dissolved	Water	SM 4500 S2 D	581088
440-254649-2 MSD	GRAB_20191115	Dissolved	Water	SM 4500 S2 D	581088

### Analysis Batch: 581224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-1	COMPOSITE_20191115	Total/NA	Water	SM 5220D	
MB 440-581224/3	Method Blank	Total/NA	Water	SM 5220D	
LCS 440-581224/4	Lab Control Sample	Total/NA	Water	SM 5220D	
720-96027-F-2 MS	Matrix Spike	Total/NA	Water	SM 5220D	
720-96027-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5220D	

## Field Service / Mobile Lab

### Analysis Batch: 580642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-254649-2	GRAB_20191115	Total/NA	Water	Field Sampling	

# Definitions/Glossary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits

### GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.

### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

**Abbreviation** These commonly used abbreviations may or may not be present in this report.

□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Accreditation/Certification Summary

Client: Jacob & Hefner Associates P.C.  
Project/Site: Omega Chemical Wastewater

Job ID: 440-254649-1  
SDG: Whittier, CA

## Laboratory: Eurofins TestAmerica, Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State Program	CA ELAP 2706	06-30-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260B		Water	Total Volatile Organic Compounds
8270C	3520C	Water	2-Methylphenol
8270C	3520C	Water	3-Methylphenol + 4-Methylphenol
8270C	3520C	Water	4-Chloroaniline
8270C	3520C	Water	Benzidine
8270C SIM	3520C	Water	1,4-Dioxane
Field Sampling		Water	Field pH
Field Sampling		Water	Field Temperature

**TestAmerica Irvine**  
1746 Delian Ave Suite 100  
Irvine, CA 92614-5817  
Phone (949) 261-1022 Fax (949) 260-3297

**Chain of Custody Record**

**TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

**Client Information**

Sampler: **Falate Rayas** Lab RM: **Roberts, Danielle C**  
Phone: **E-mail:** **danielle.roberts@testamericanca.com**

Carrier Tracking No(s):

COC No:  
**440-137466-24652.1**

Page 1 of 1

Job #:

**Analysis Requested**

Preservation Codes:  
A - HCl      M - Hexane  
B - NaOH      N - None  
C - Zn Acetate      O - AsNaO2  
D - Nitric Acid      P - Na2CO3  
E - NaHSO4      Q - Na2SO3  
F - MeOH      R - Na2S2O3  
G - Amchlor      S - H2SO4  
H - Ascorbic Acid      T - TSP Bodehydrate  
I - Ics      U - Acetone  
J - DI Water      V - MCAA  
K - EDTA      W - pH 4-5  
L - EDA      Z - other (specify)  
Other:

Total Number of Contaminates: **2**

2860B\_1L - A+A+ZCVE  
2870C, 2870C\_GIM  
28260B\_1L - VOCs+OxyS+KAs+F11-3L  
SM4500\_S2\_D - Dissolved Surface  
28260D\_TSS  
2220D\_COD

Field Filtered Sample (Yes or No): **No**

Project #: **44003641**

Site: **SSOW#:**

Omega Chemical Wastewater

Project Name: **Omega Chemical Wastewater**

Address: **15375 Barranca Parkway, J-101**

City: **Irvine**

State/Zip: **CA, 92618**

Phone: **949-453-1045(Tel)** **949-453-1047(Fax)**

Email: **thenderson@jacobhefner.com**

Tell Filtered Sample (Yes or No): **No**

TAT Requested (days): **1**

PO #: **Omega Chemical Wastewater**

WO #:

PO Project #: **44003641**

SSOW#:

California

**Special Instructions/Note:**

ISCO start **11-14-19 7:30**  
ISCO end **11-15-19 7:30**  
Field Temp **17.4 °C**  
Field PH **8.68**  
Fluorometer **0.5**  
start **0.5**  
End **0.5**

440-254659 Chain of Custody  
**= 4352760**



Possible Hazard Identification  
 Non-Hazard     Flammable     Skin Irritant     Poison B     Unknown     Radiological

Deliverable Requested: I, II, III, IV, Other (specify):

Empty Kit Relinquished by **[Signature]** Date: **11-15-19** Time: **12:00** Method of Shipment:

Relinquished by **[Signature]** Date/Time: **11-15-19** Received by: **Company** Date/Time: **11-15-19** Company

Relinquished by **[Signature]** Date/Time: **11-15-19** Received by: **Company** Date/Time: **11-15-19** Received by: **Company**

Custody Seals intact: **Custody Seal No.: T69 22/24 10 89** Other Remarks: **A Yes    A No**

Ver: 03/01/2016

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## Login Sample Receipt Checklist

Client: Jacob & Hefner Associates P.C. Job Number: 440-254649-1  
SDG Number: Whittier, CA

**Login Number: 254649**

**List Source: Eurofins TestAmerica, Irvine**

**List Number: 1**

**Creator: Soderblom, Tim**

Question	Answer	Comment	
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True		6
The cooler's custody seal, if present, is intact.	N/A	Not present	7
Sample custody seals, if present, are intact.	N/A	Not Present	8
The cooler or samples do not appear to have been compromised or tampered with.	True		9
Samples were received on ice.	True		10
Cooler Temperature is acceptable.	True		11
Cooler Temperature is recorded.	True		12
COC is present.	True		13
COC is filled out in ink and legible.	True		14
COC is filled out with all pertinent information.	True		15
Is the Field Sampler's name present on COC?	True		
There are no discrepancies between the containers received and the COC.	True		
Samples are received within Holding Time (excluding tests with immediate HTs)	True		
Sample containers have legible labels.	True		
Containers are not broken or leaking.	True		
Sample collection date/times are provided.	True		
Appropriate sample containers are used.	True		
Sample bottles are completely filled.	True		
Sample Preservation Verified.	N/A		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True		
Multiphasic samples are not present.	True		
Samples do not require splitting or compositing.	True		
Residual Chlorine Checked.	N/A		

## **ATTACHMENT E**

**PSVP Piezometric and Water Quality Data**

**Attachment E, Table E-1**  
**Piezometric Monitoring Data**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**Fourth Quarter 2019**

Well No.	Top of Casing Elevation (feet MSL)	Screen Interval (feet MSL)	Date	Depth To Water (feet btoc)	Groundwater Elevation (feet MSL)
EW-1 <sup>1</sup>	198.96	114.94 - 129.94	11/5/2019	85.63	113.33
EW-2 <sup>1</sup>	197.87	113.77 - 128.77	11/5/2019	86.04	111.83
EW-3 <sup>1</sup>	196.78	114.59 - 129.59	11/5/2019	83.06	113.72
EW-4 <sup>1</sup>	195.79	112.73 - 127.73	11/5/2019	80.33	115.46
EW-5 <sup>1</sup>	194.19	111.96 - 126.96	11/5/2019	81.85	112.34
PZ-1	200.26	112.65 - 132.65	11/5/2019	Dry	Dry
PZ-2	201.48	118.02 - 138.02	11/5/2019	Dry	Dry
PZ-3	203.72	114.40 - 134.40	11/5/2019	Dry	Dry
PZ-4	196.26	106.66 - 126.66	11/5/2019	74.02	122.24
OW1A	212.53	132.47 - 147.47	11/5/2019	Dry	Dry
OW1B	207.22	87.42 - 97.42	11/7/2019	95.75	111.47
OW2	202.33	123.23 - 143.23	11/5/2019	Dry	Dry
OW3A	198.58	116.13 - 136.13	11/5/2019	80.98	117.60
OW3B	197.38	75.79 - 85.79	11/5/2019	97.11	100.27
OW7	214.29	124.69 - 144.69	11/5/2019	Dry	Dry
OW8A	200.66	121.33 - 140.93	11/7/2019	78.60	122.06
OW8B	200.84	75.39 - 85.39	11/7/2019	100.49	100.35
OW9	198.07	108.42 - 128.42	11/5/2019	86.31	111.76
OW10	195.54	106.46 - 126.46	11/5/2019	81.12	114.42
OW12	208.42	108.97 - 128.97	11/7/2019	91.94	116.48

Notes:

Elevation data per California Coordinate System NADV88

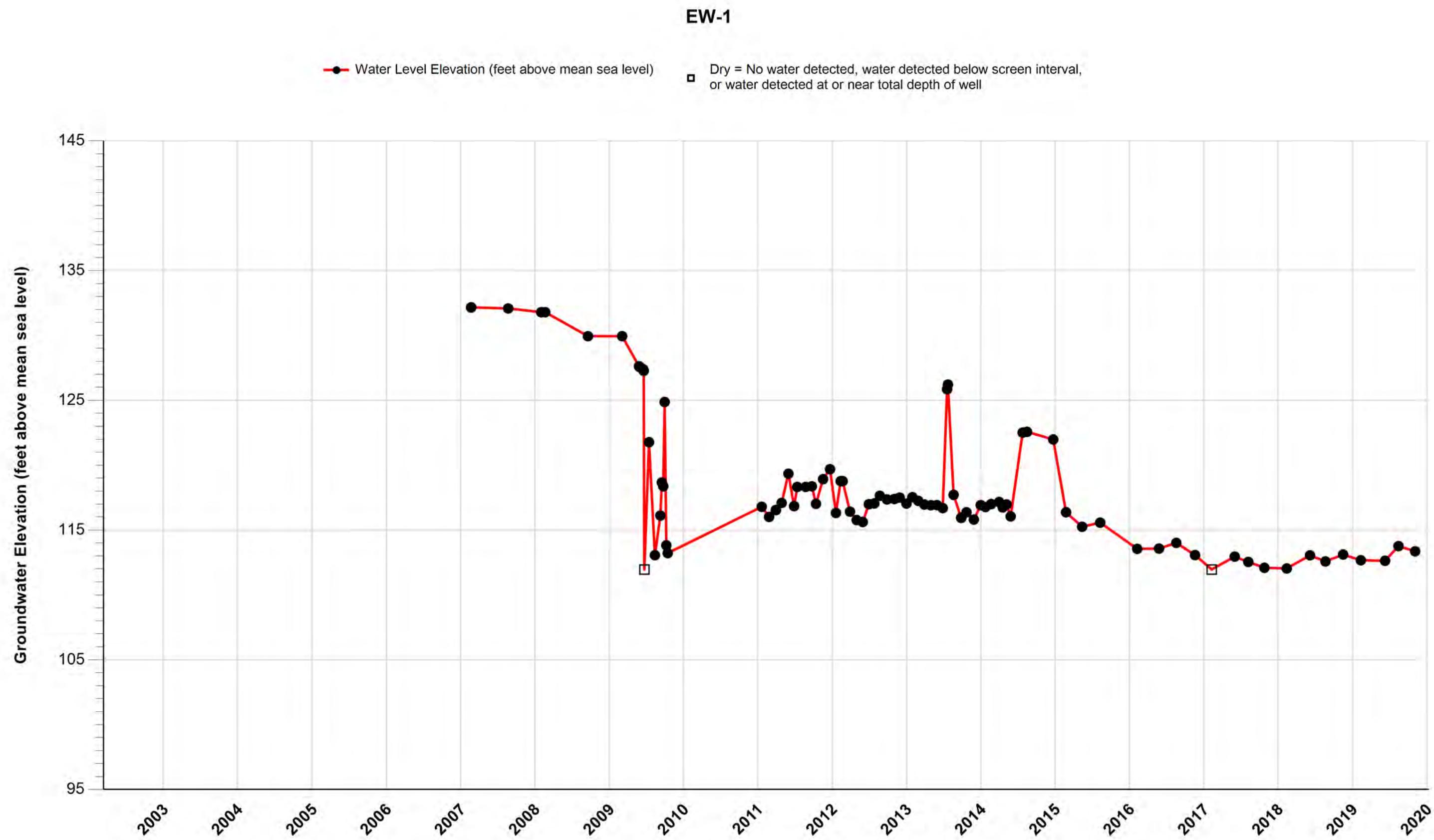
btoc = below top of casing

Dry = No water detected, water detected below the screen interval, or water detected at or near total depth of well

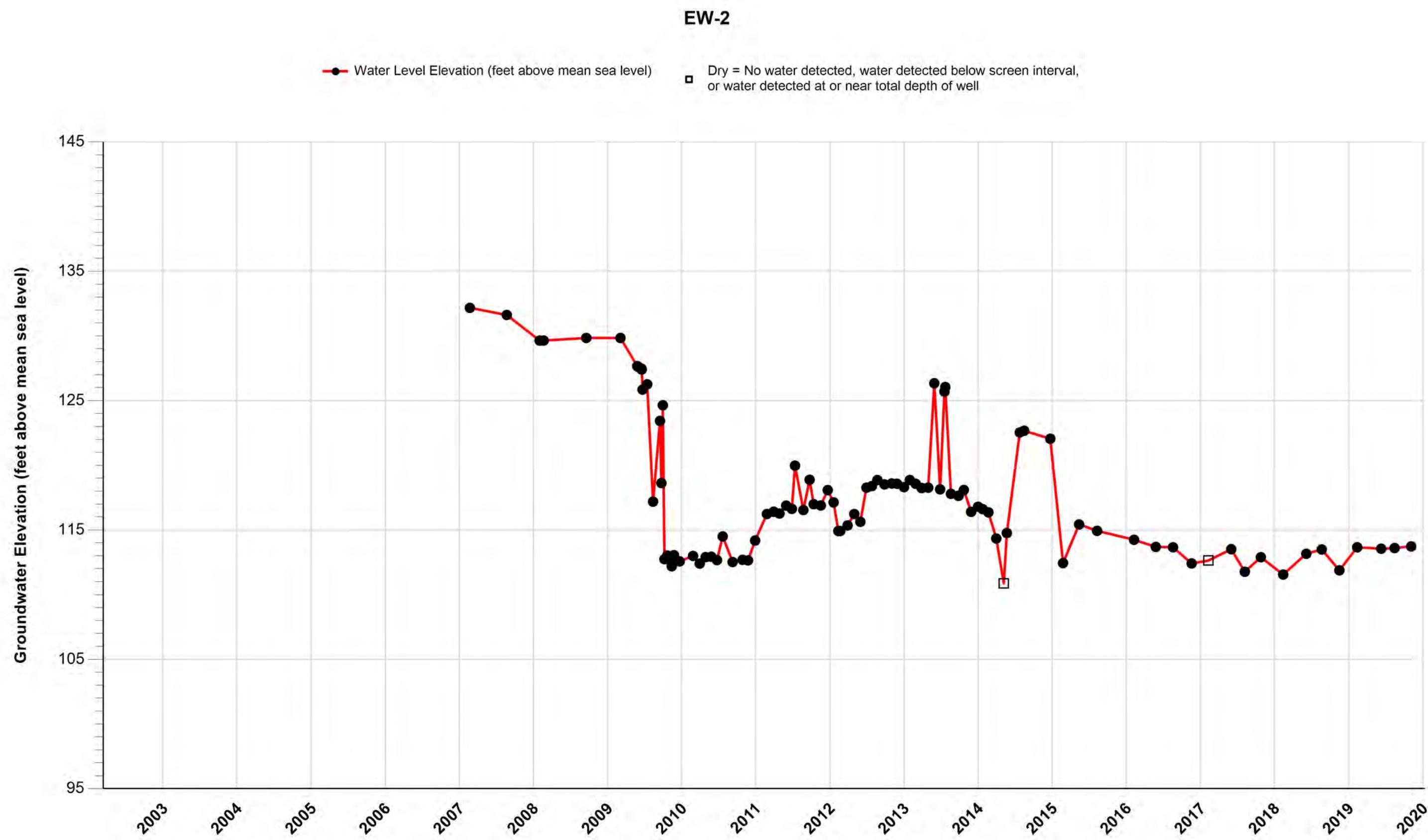
MSL = mean sea level

1. The depth to water shown are based on hand measurements. The subsequent time series charts are based on piezometer readings which may differ slightly.

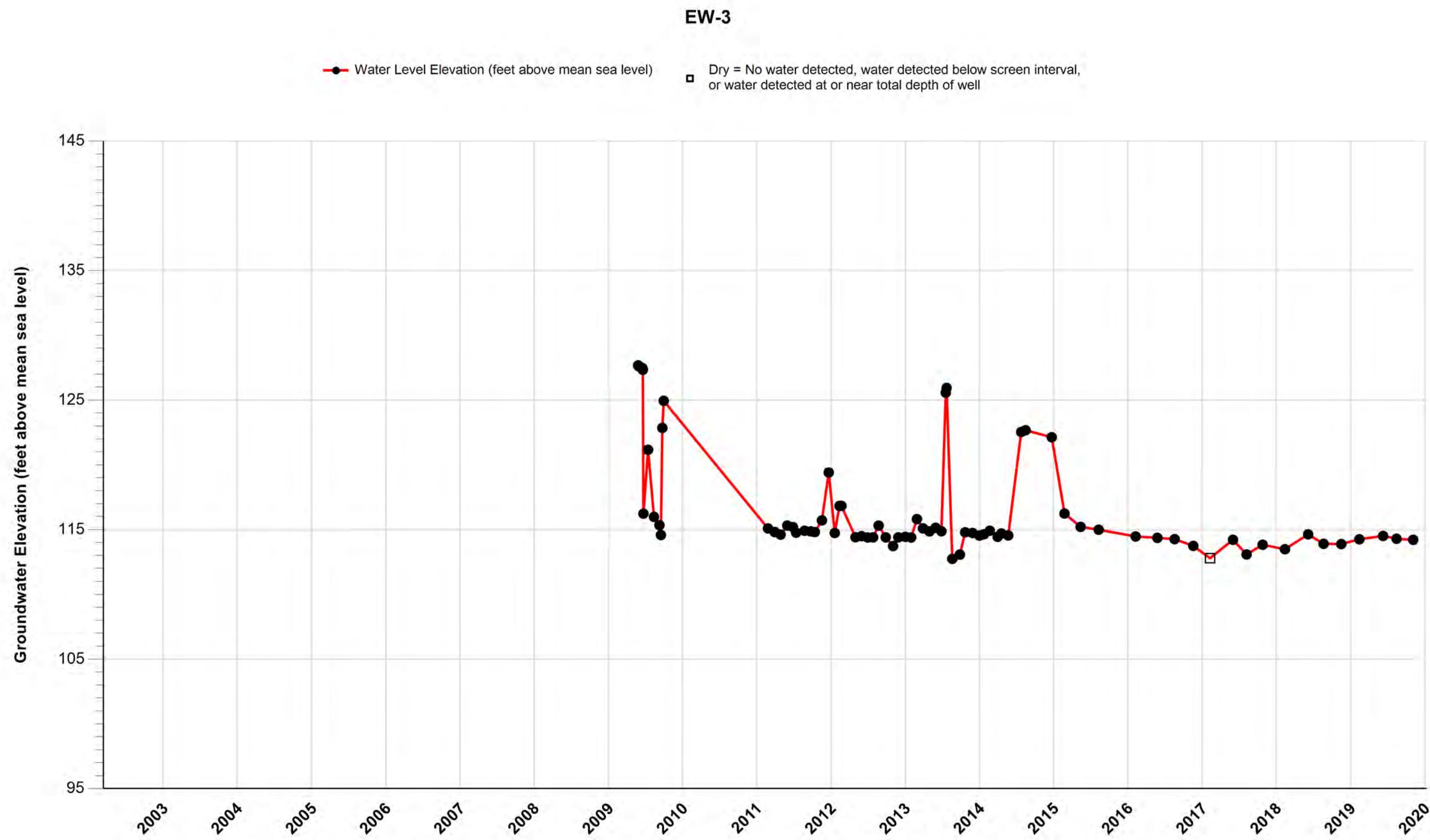
**Attachment E, Figure E-1**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**PSVP Piezometric Data**



Attachment E, Figure E-2  
OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data

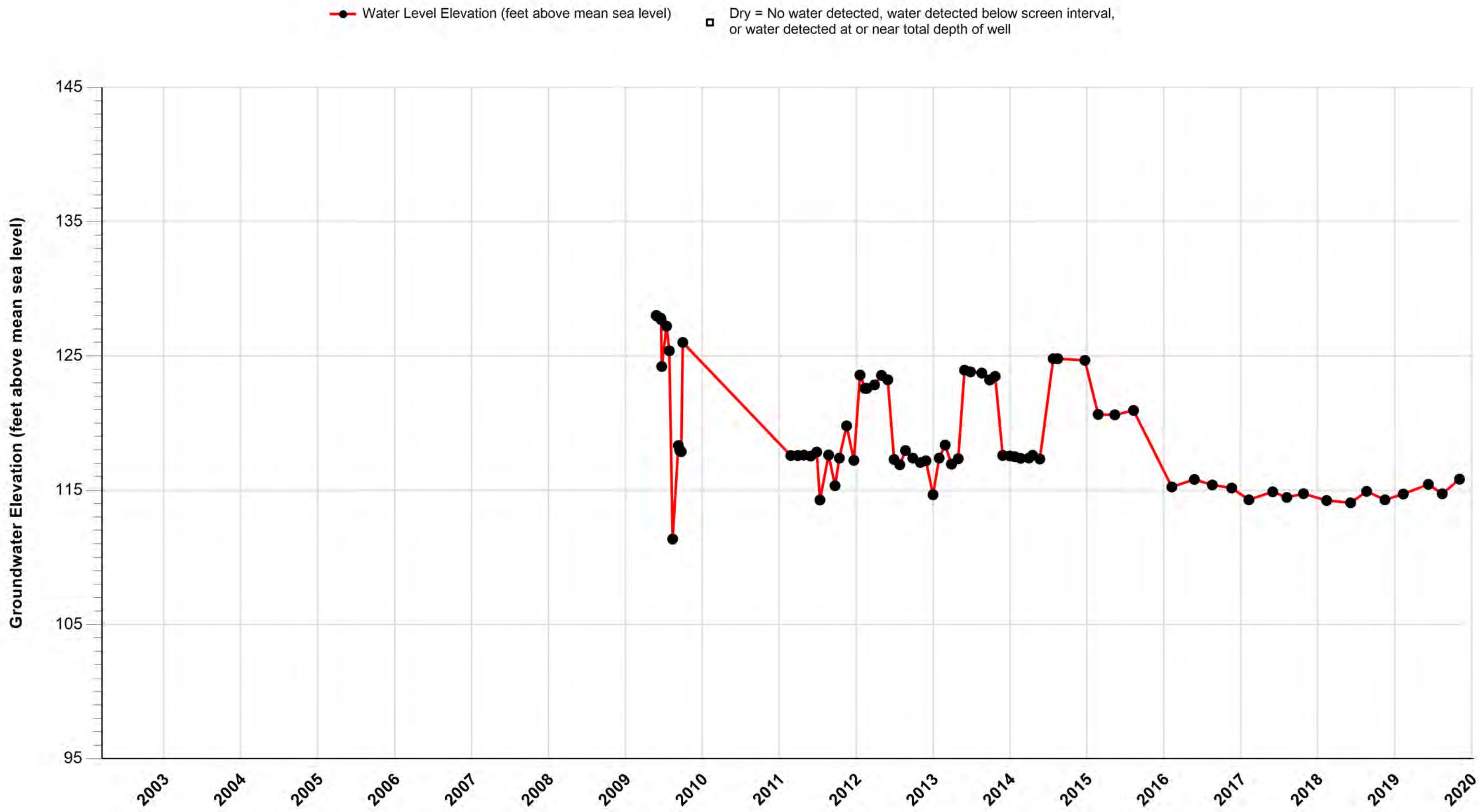


Attachment E, Figure E-3  
OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data

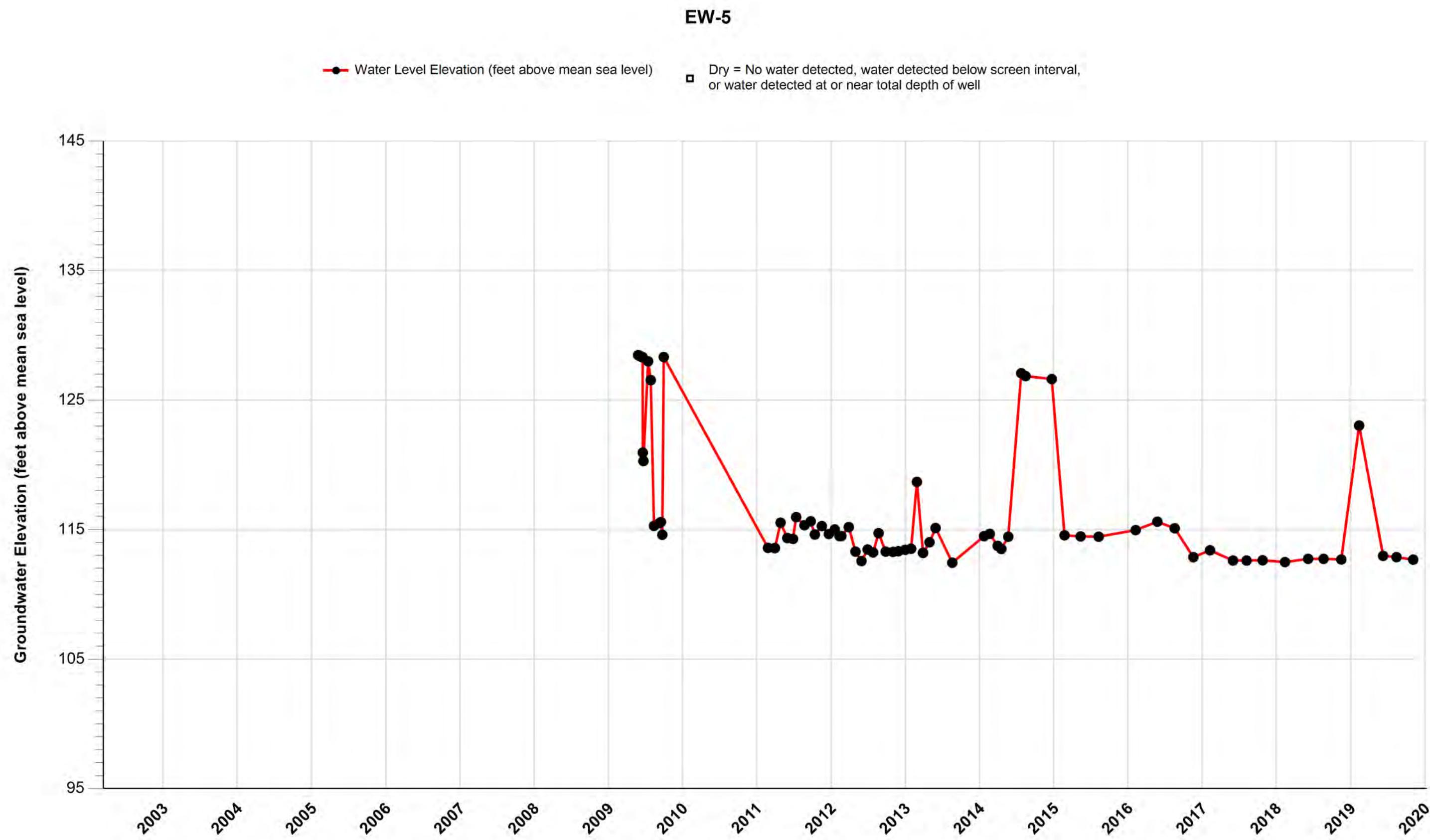


**Attachment E, Figure E-4**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**PSVP Piezometric Data**

**EW-4**

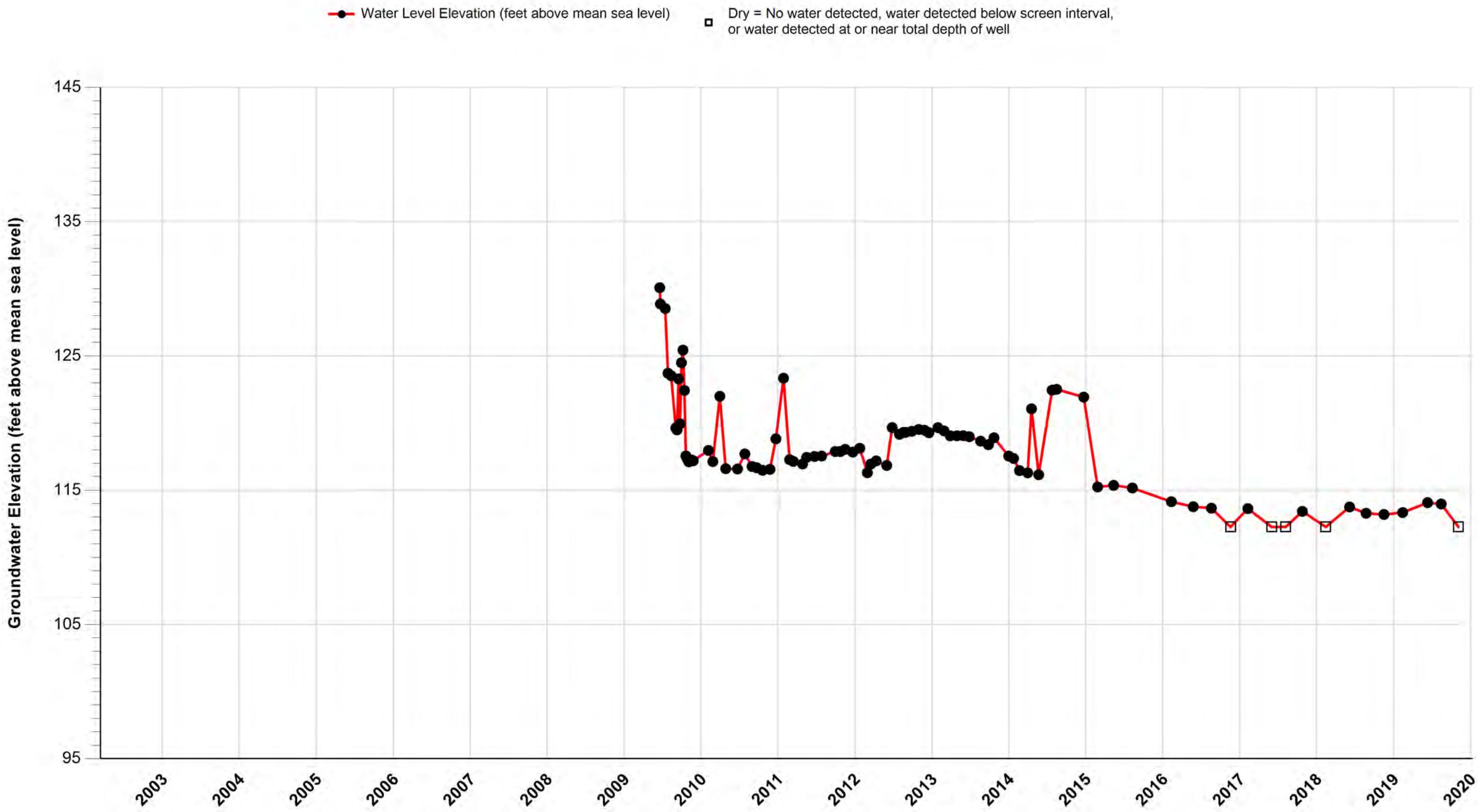


Attachment E, Figure E-5  
OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data



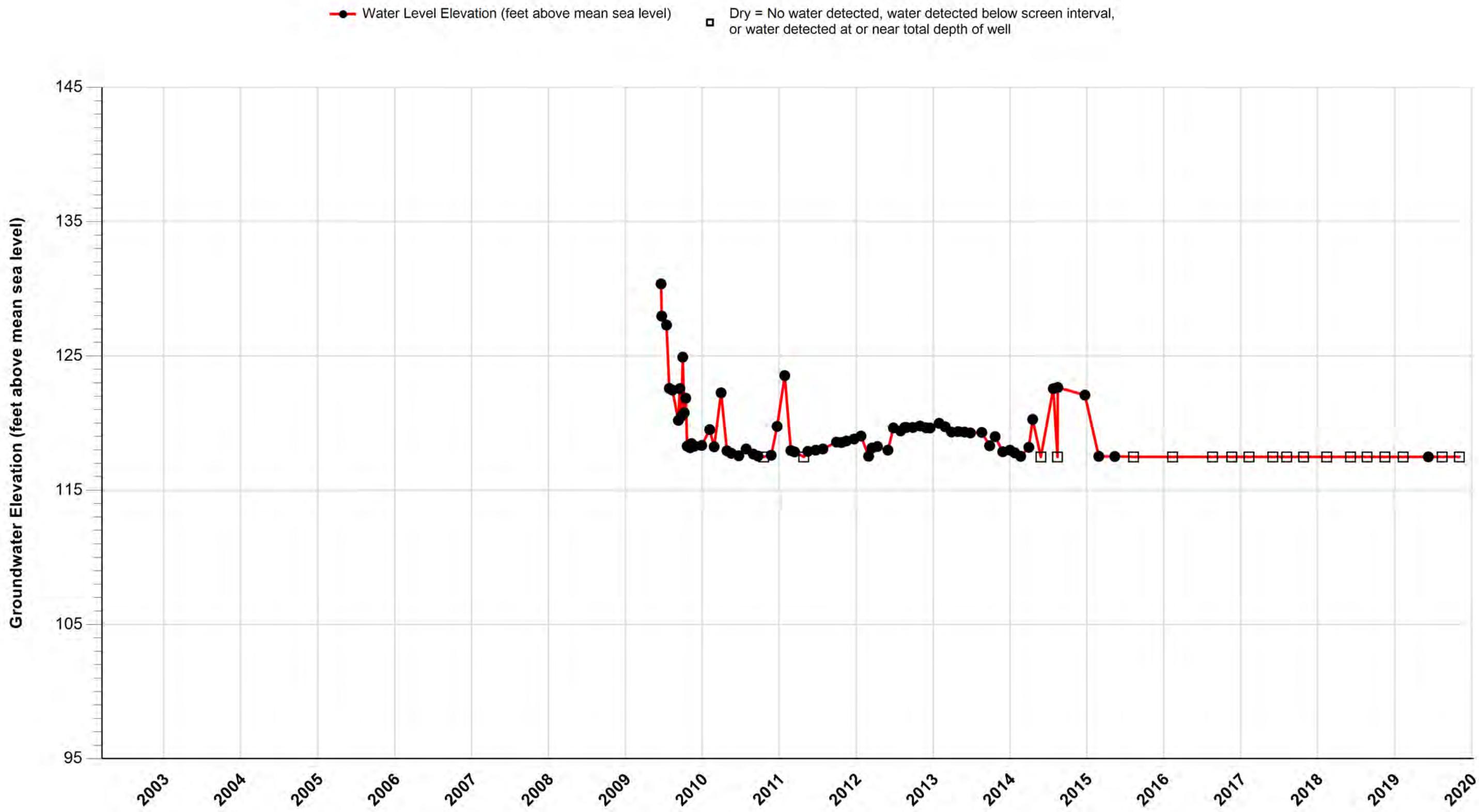
**Attachment E, Figure E-6**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**PSVP Piezometric Data**

**PZ-1**



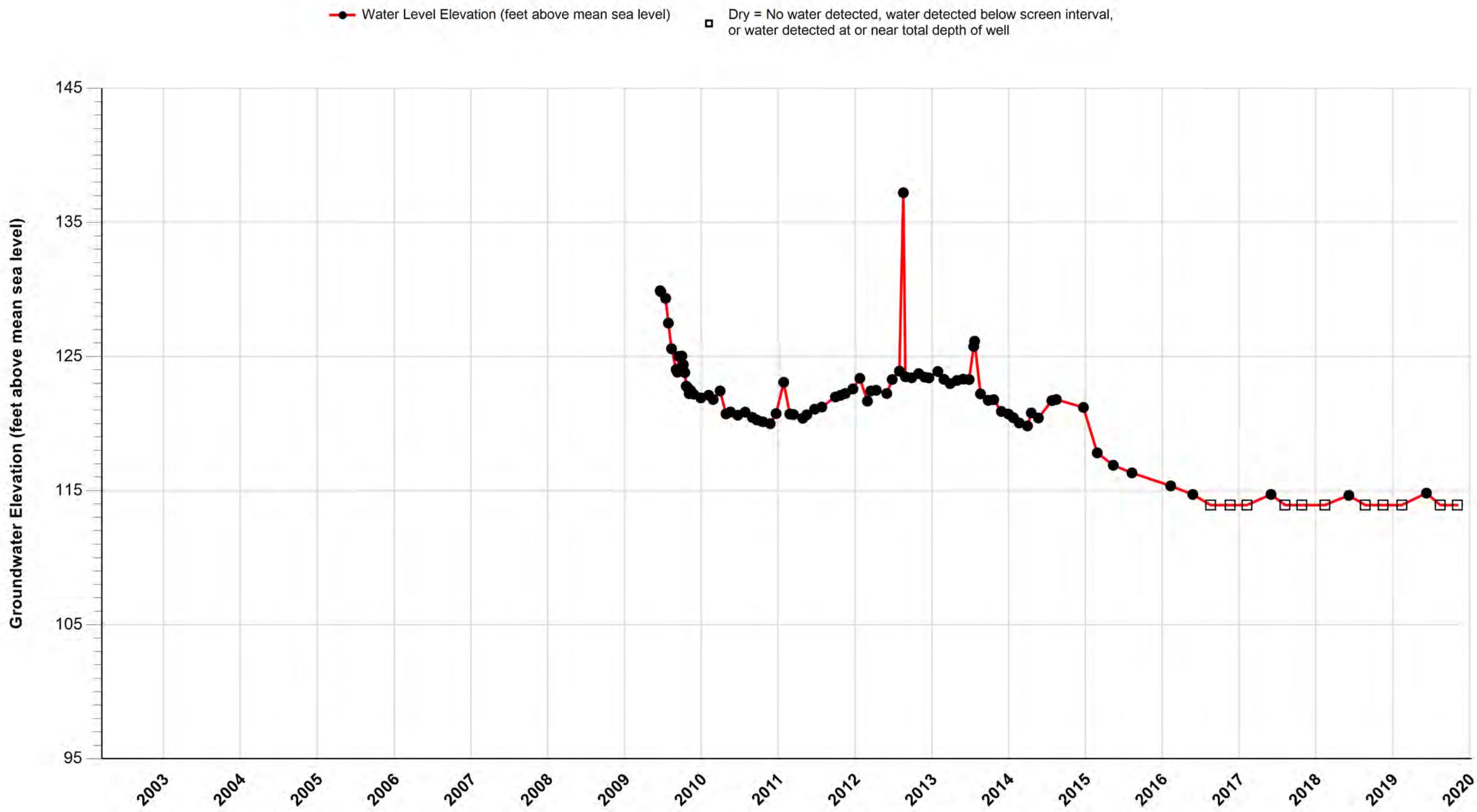
**Attachment E, Figure E-7**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**PSVP Piezometric Data**

**PZ-2**



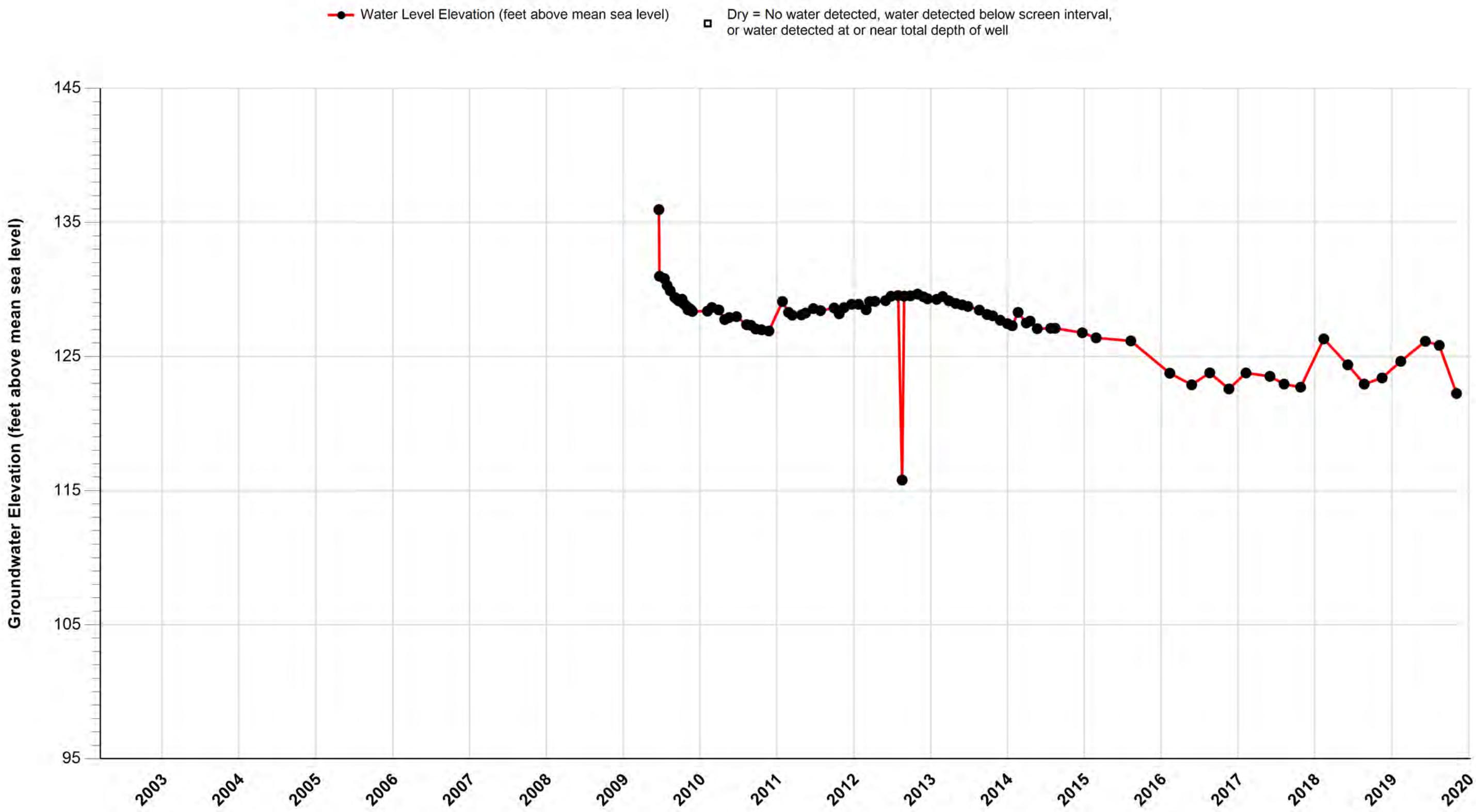
Attachment E, Figure E-8  
OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data

PZ-3

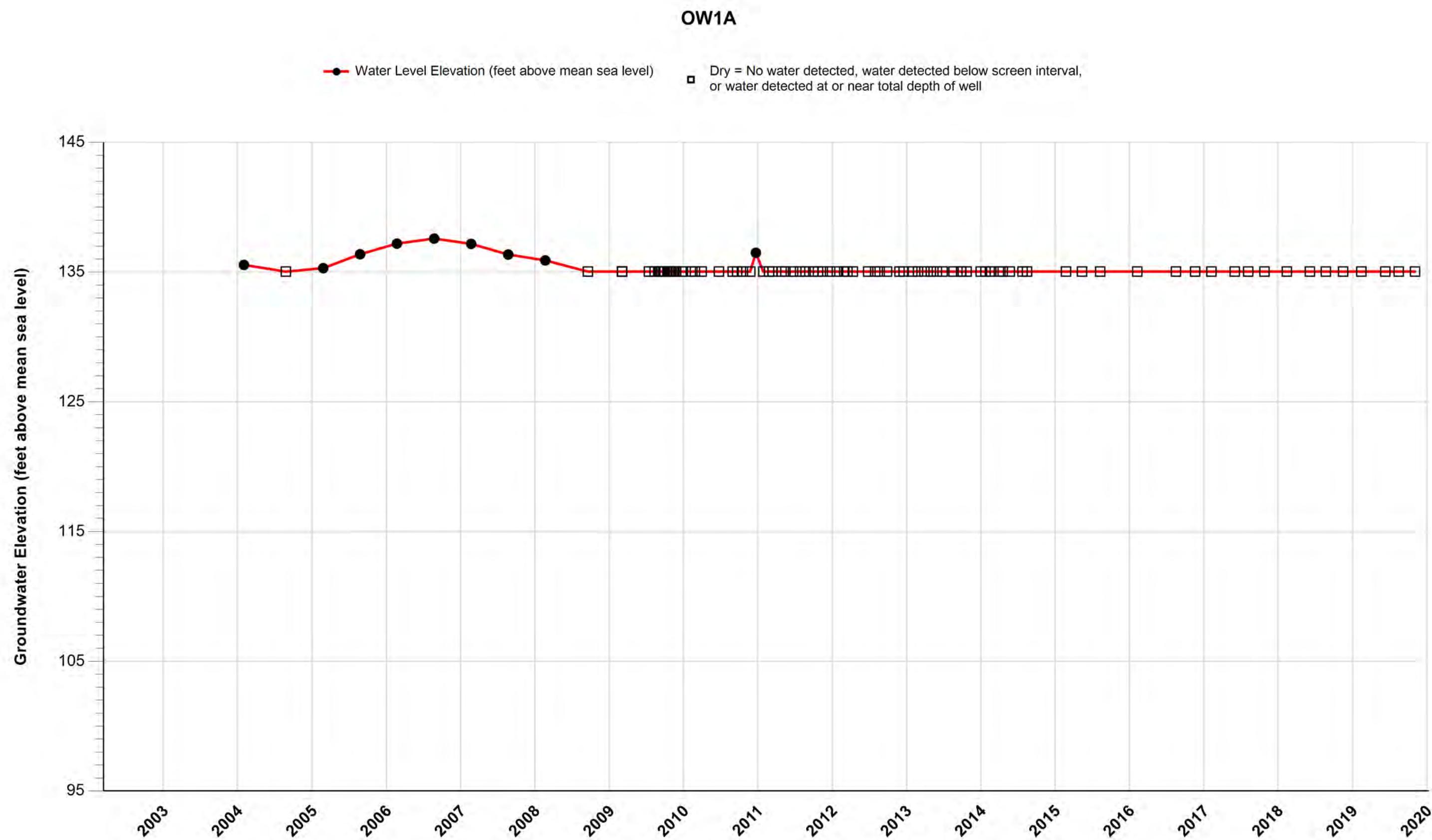


**Attachment E, Figure E-9**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**PSVP Piezometric Data**

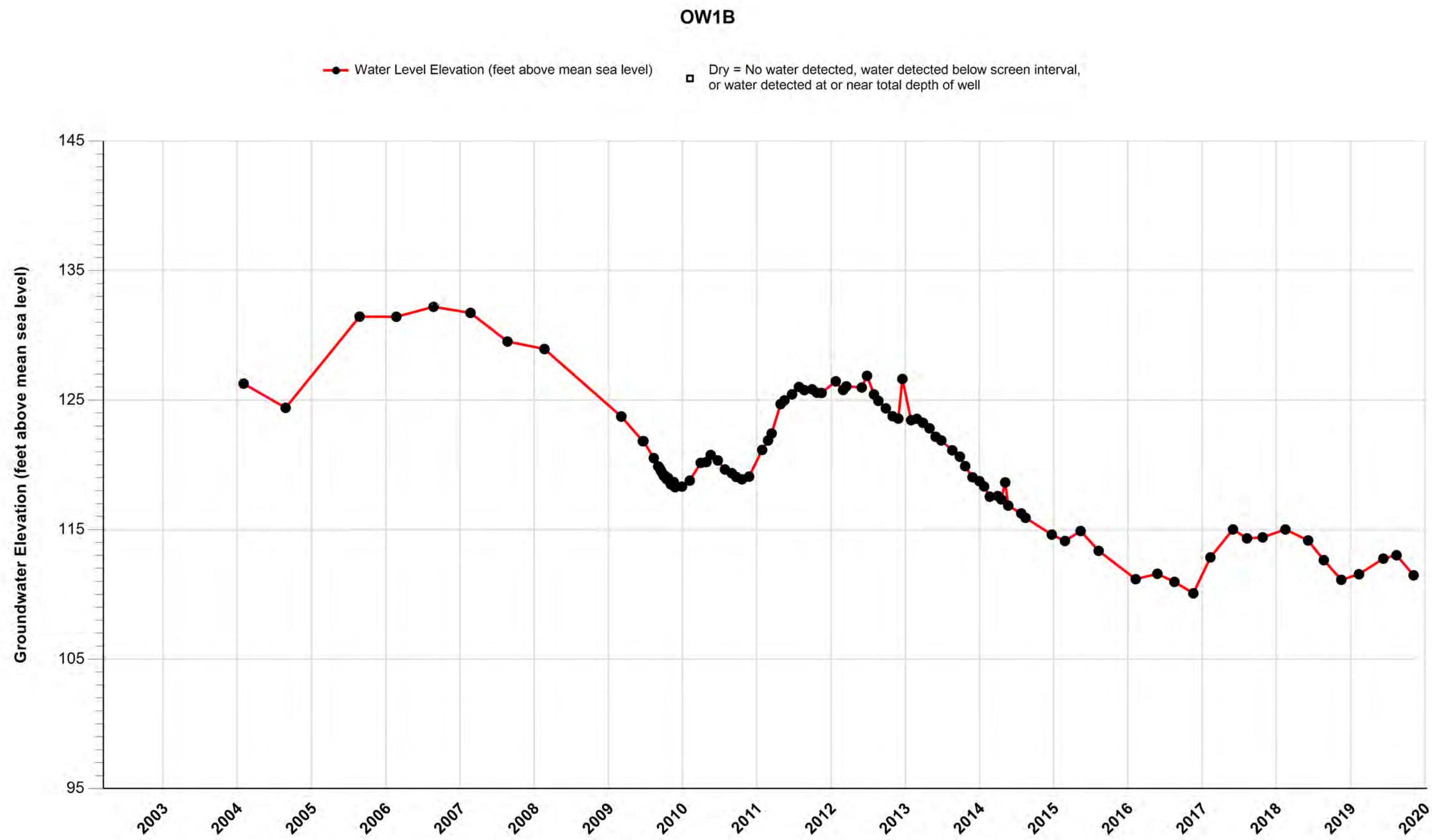
**PZ-4**



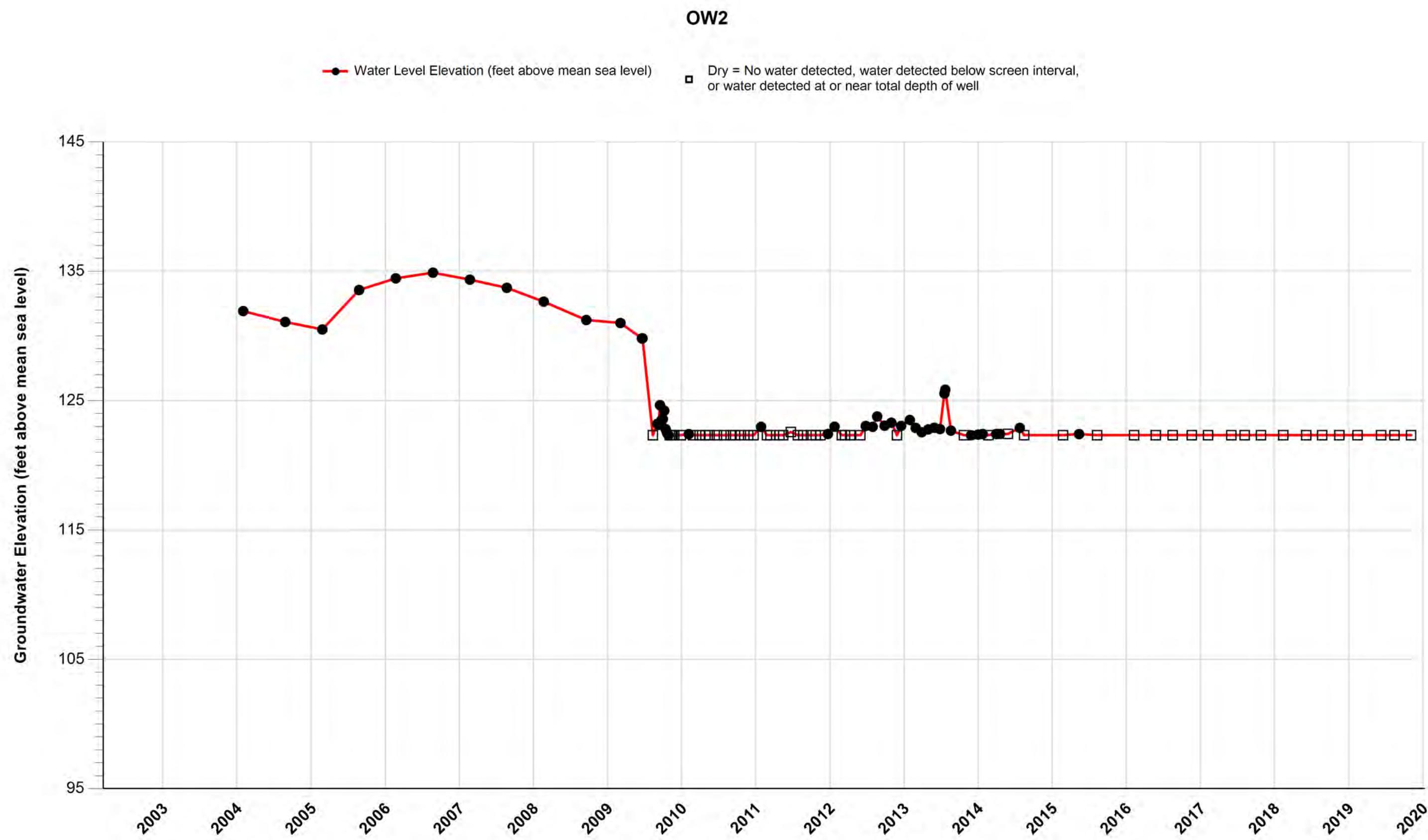
**Attachment E, Figure E-10**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**PSVP Piezometric Data**



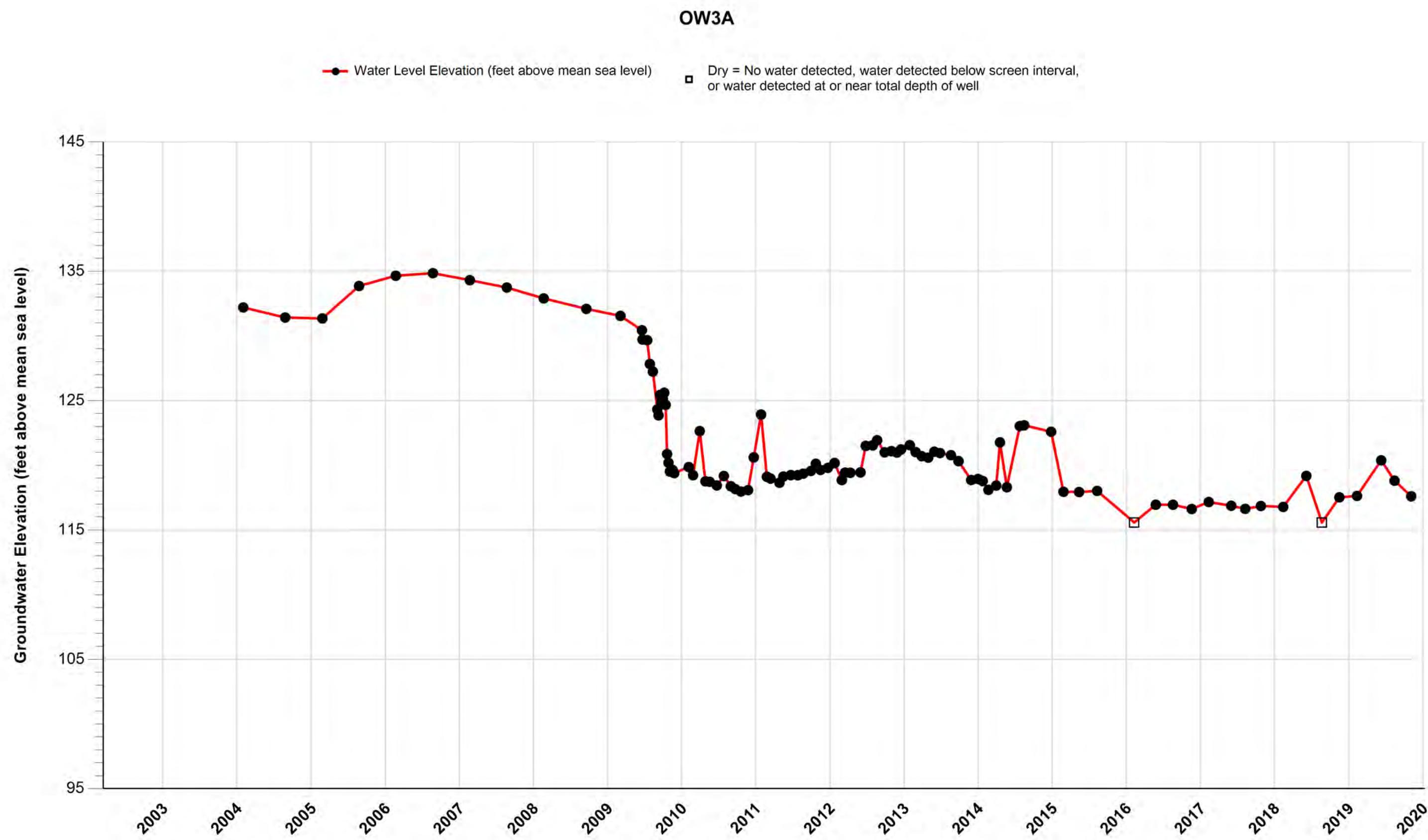
**Attachment E, Figure E-11**  
**OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site**  
**PSVP Piezometric Data**



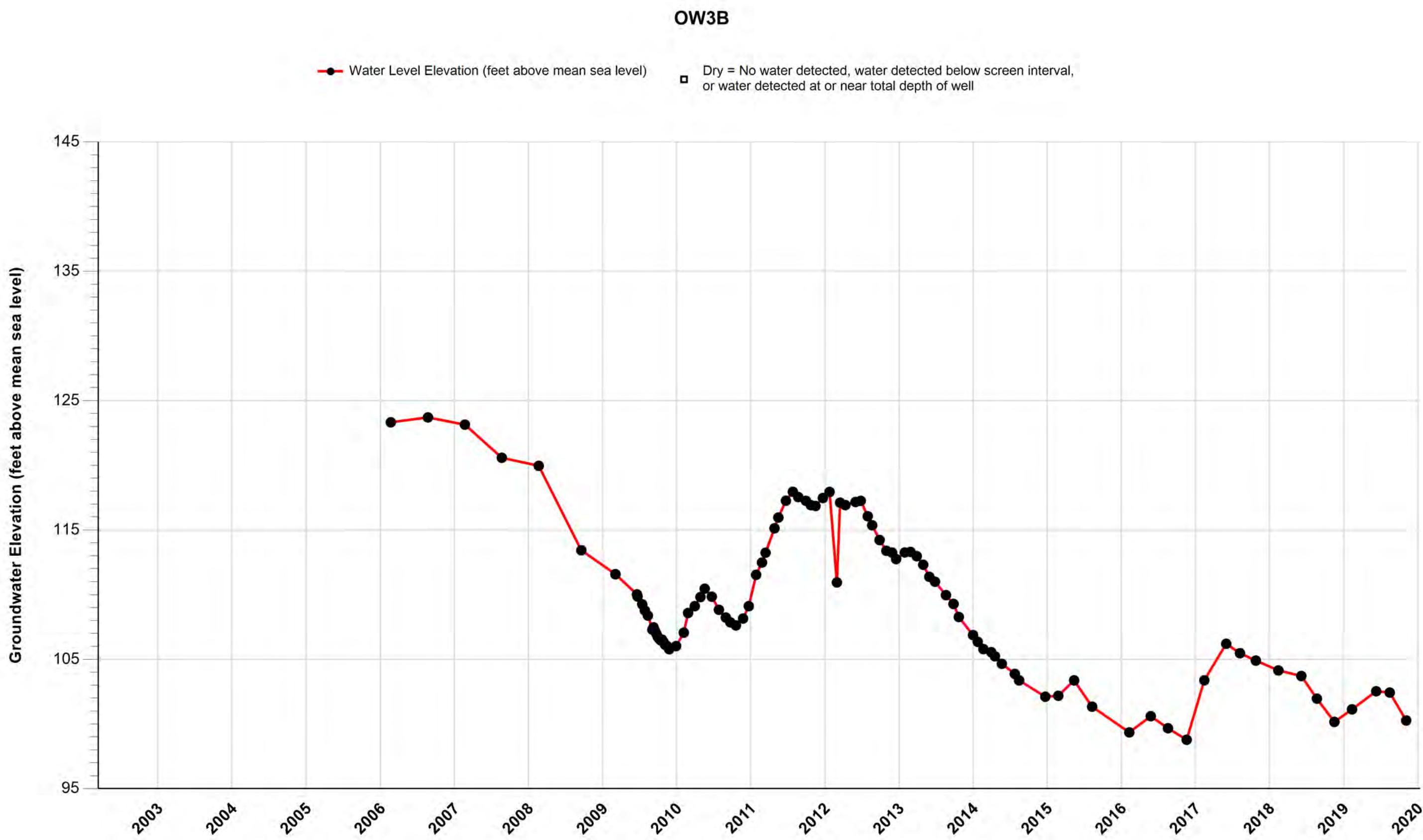
Attachment E, Figure E-12  
OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data



Attachment E, Figure E-13  
OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data

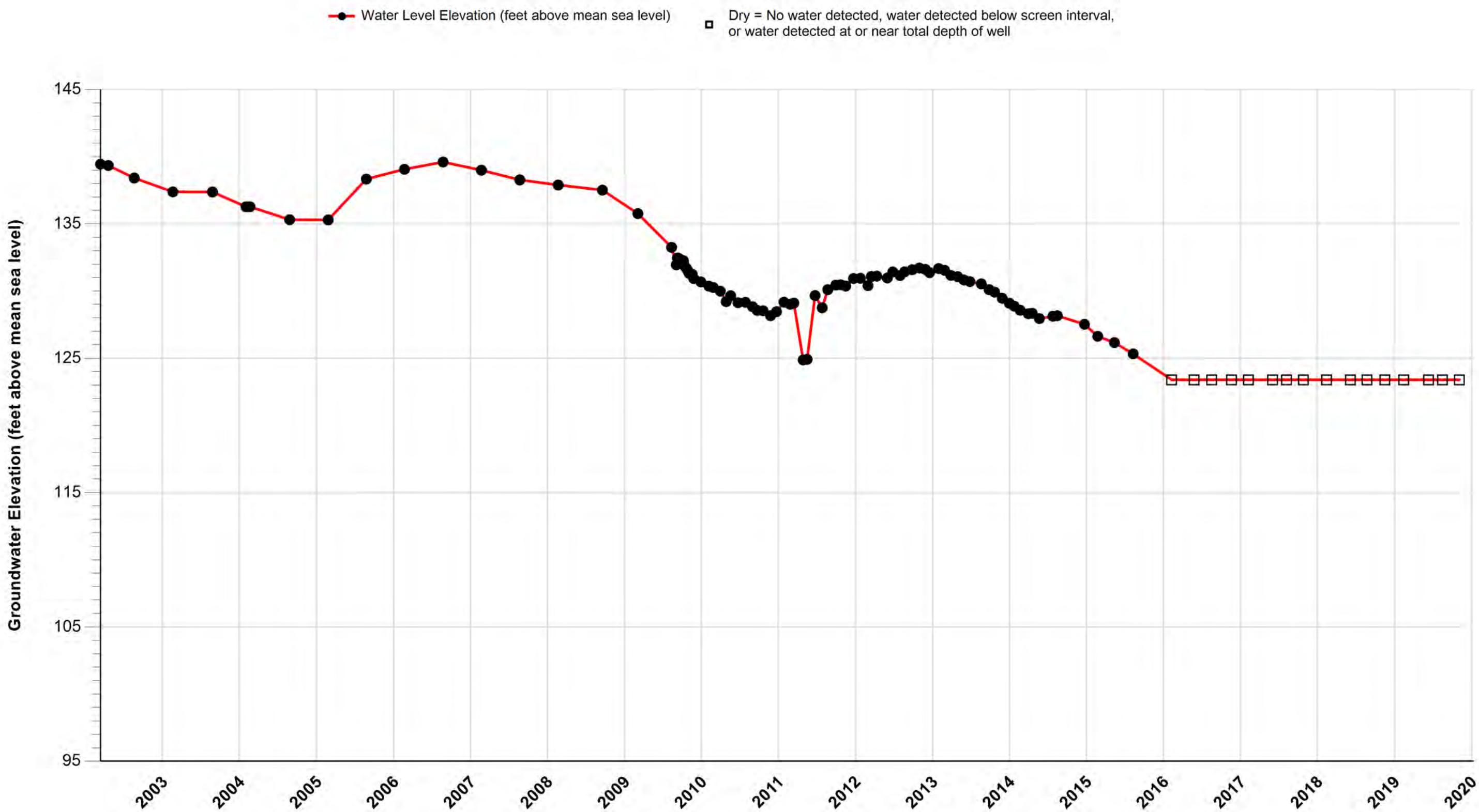


Attachment E, Figure E-14  
OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data

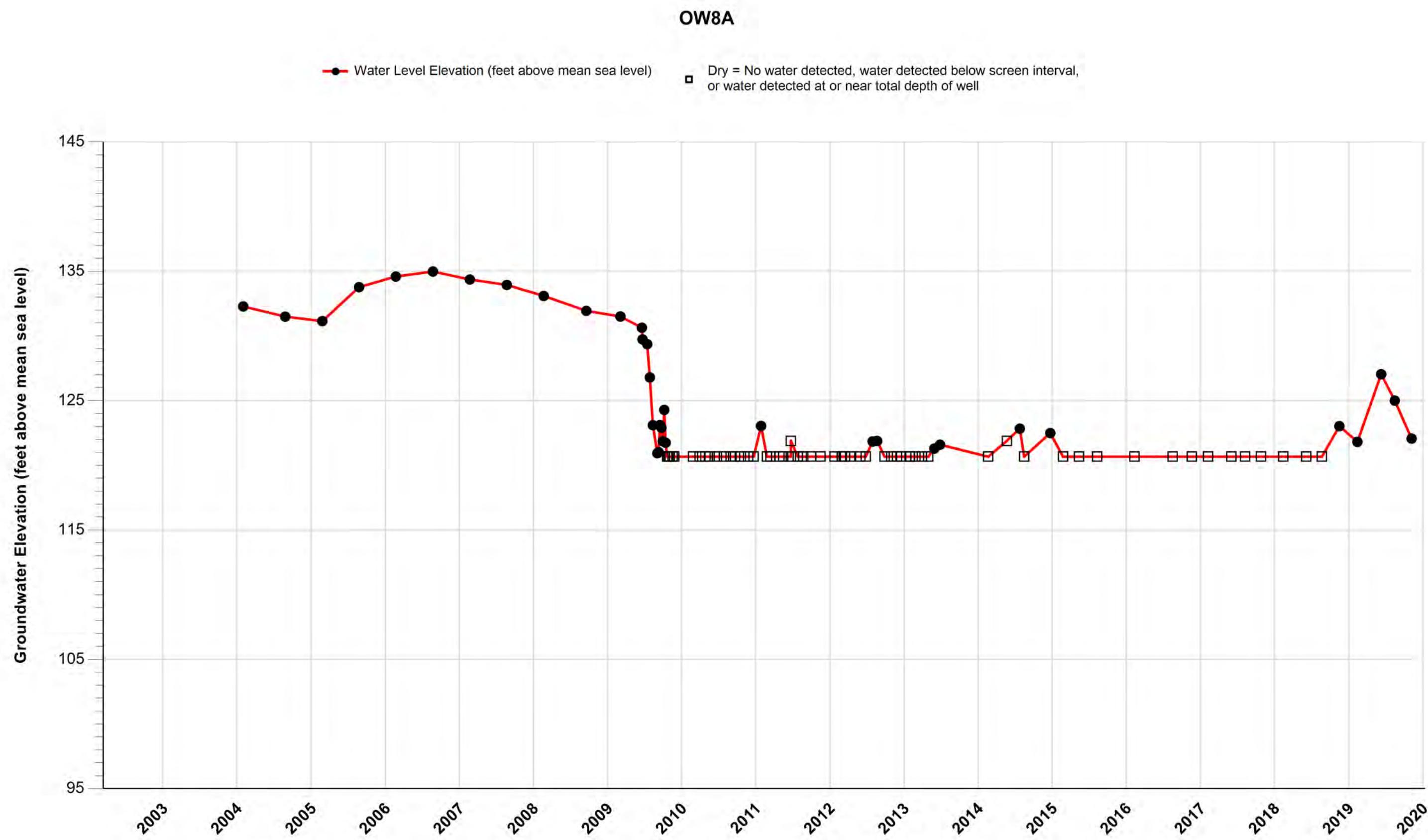


Attachment E, Figure E-15  
OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data

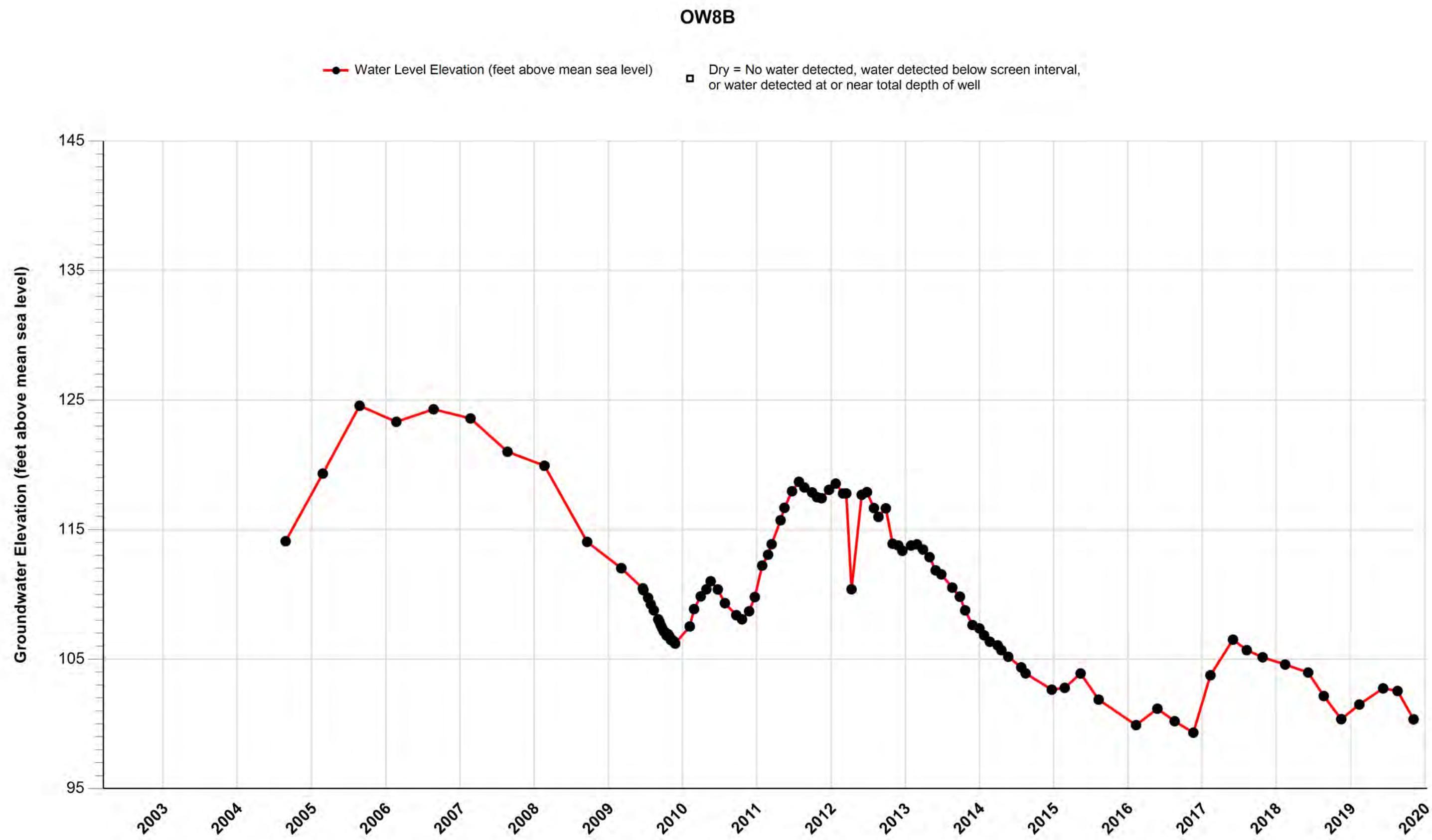
OW7



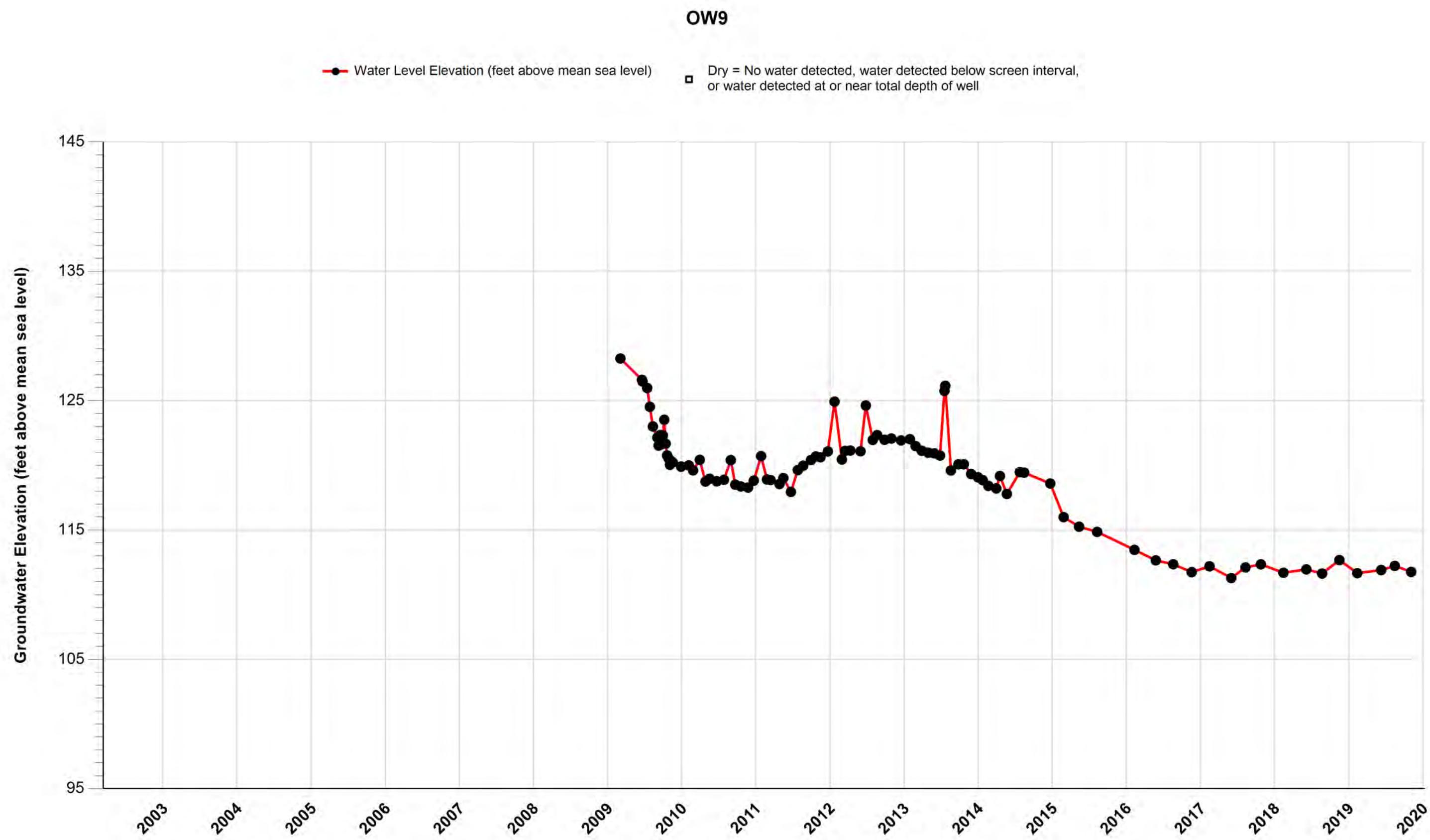
Attachment E, Figure E-16  
OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data



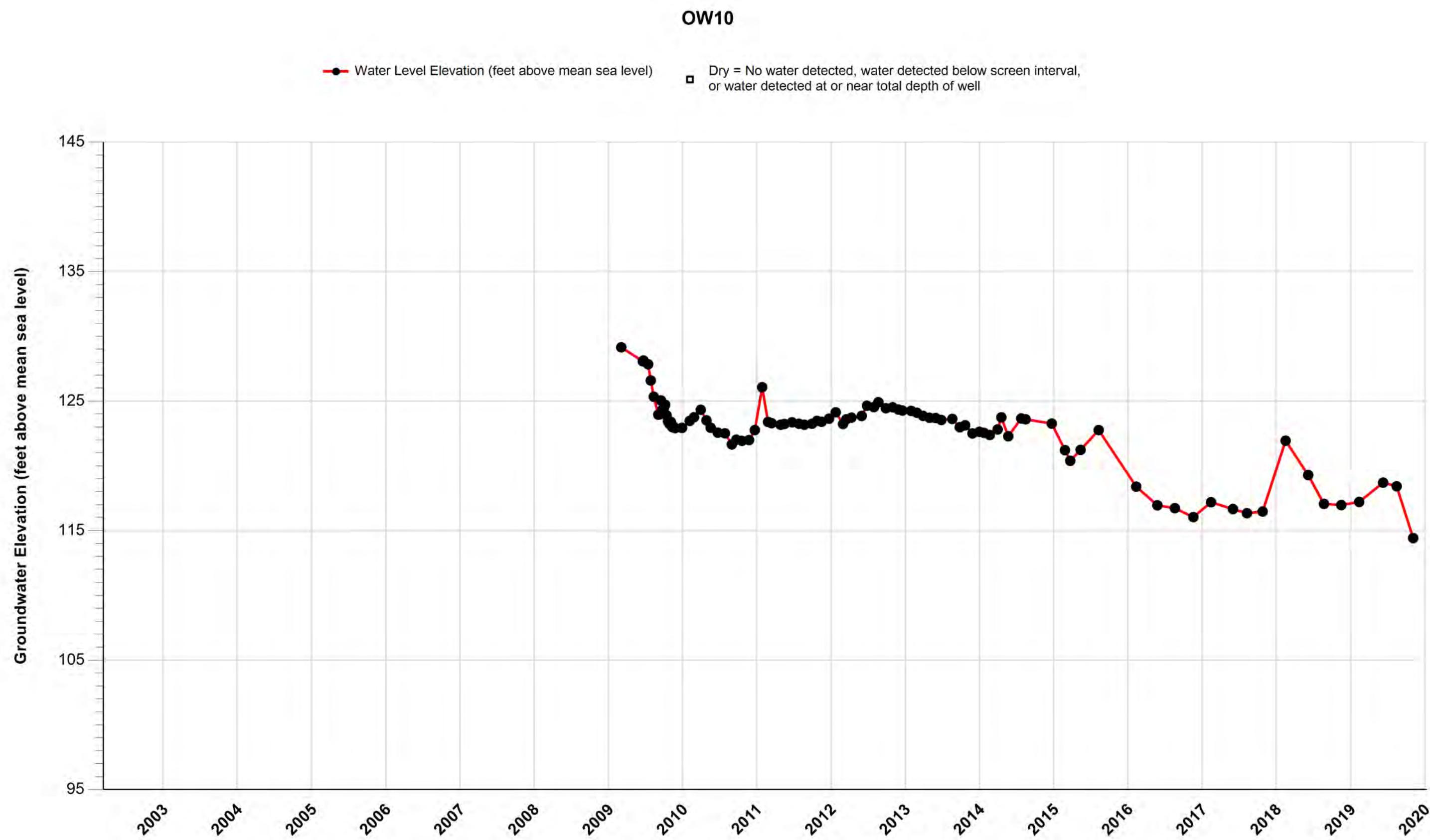
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OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data



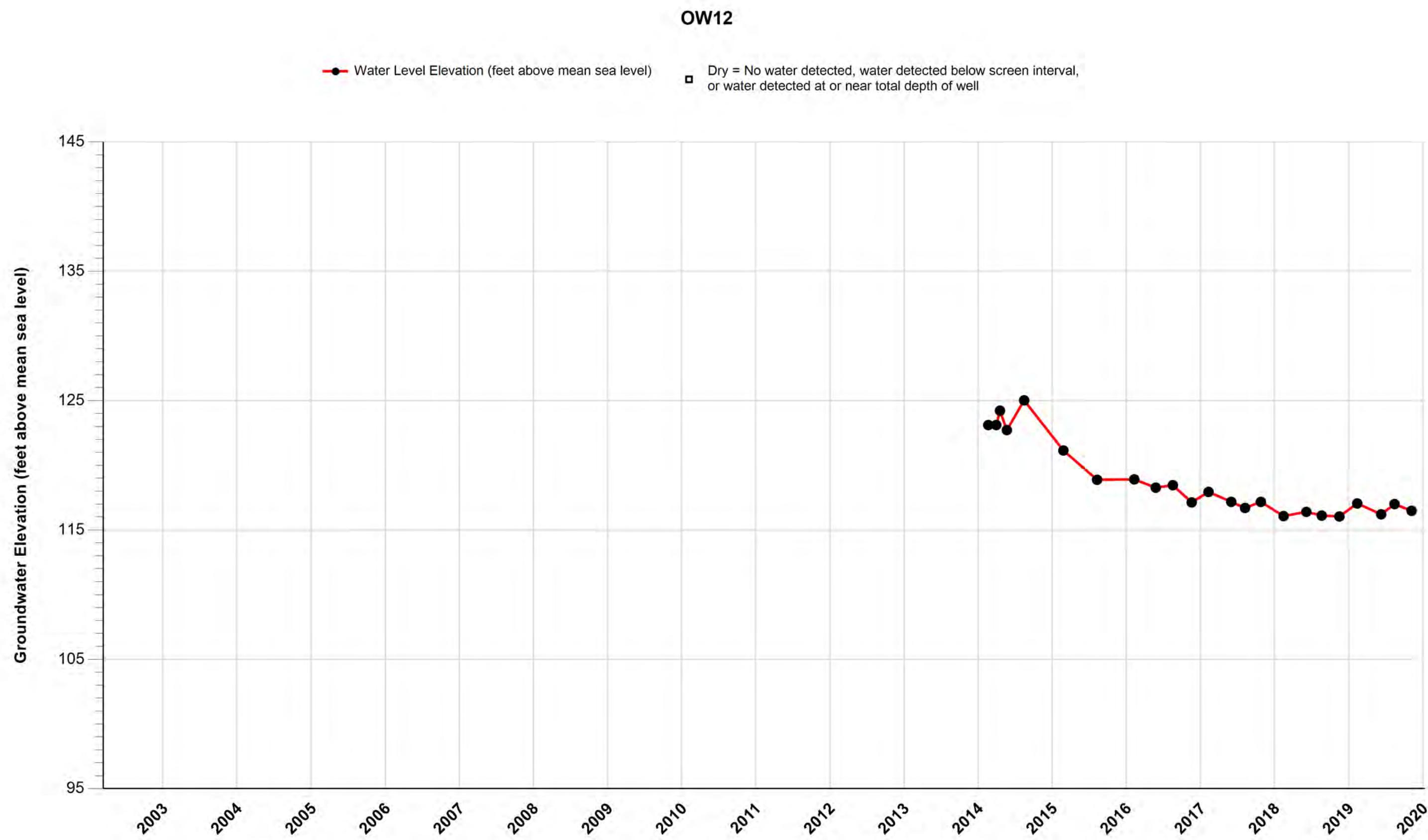
Attachment E, Figure E-18  
OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data



Attachment E, Figure E-19  
OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data



Attachment E, Figure E-20  
OU-1 Groundwater Containment Remedy, Omega Chemical Superfund Site  
PSVP Piezometric Data



## **ATTACHMENT F**

# **Quarterly Groundwater Containment Review**



## Memorandum

*To:* Jaime Dinello, de maximis, inc.

*From:* Matt Gamache, CDM Smith

*Date:* January 30, 2020

*Subject:* Omega Operable Unit 1 EE/CA Remedy

*Quarterly Groundwater Containment Review – November 5-7, 2019*

This memorandum provides and discusses the fourth quarter 2019 (4Q2019) groundwater elevation contours based on the November 5 and 7, 2019 groundwater monitoring gauging activities, and the response of the local groundwater table to the Omega Operable Unit (OU)-1 Groundwater Containment Remedy (GCR) operation, which was installed and began operating in 2009. The primary goal of the GCR is to contain the highest levels of contamination dissolved in groundwater within OU-1, so that the contamination does not migrate and contribute to the downgradient regional groundwater plume.

Extraction wells (EWs) located along Putman Street are designed to provide a hydraulic barrier at the down-gradient boundary of OU-1 (Figure F-1). In addition to operation of the GCR hydraulic containment extraction wells, other groundwater extraction is occurring within OU-1. Seven dual-phase extraction (DPE) wells are also operating and extracting groundwater within OU-1. These DPE wells were constructed in June through December 2014 as part of the Full Scale On-Site (OU-1) Soil Remedy under the 2010 Consent Decree between the USEPA and OPOG, and are also shown on Figure F-1. Although installed as part of the OU-1 soil remedy to increase subsurface vapor removal, the DPE wells are currently extracting the majority of the water treated by the GCR groundwater treatment plant.

On November 5 and 7, 2019, in accordance with the approved Performance Standards Verification Plan (PSVP; CDM, 2007), water level elevations were measured manually for the purposes of demonstrating hydraulic containment of groundwater within OU-1. The majority of the monitoring points used in this evaluation lie within the boundaries of OU-1. However, selected monitoring points immediately adjacent to OU-1 (e.g. PZ-3, OW-9, and OW-11) are also used to assess the performance of the OU-1 groundwater remedy. All PSVP-required locations were measured manually during 4Q2019. These data are plotted along with interpreted water level elevation contours (1-foot interval) on Figure F-1 and demonstrate that OU-1 groundwater is contained.

The water-level contour map (Figure F-1) demonstrates that flow from the former Omega Chemical property located at 12504 and 12515 Whittier Blvd. Whittier, California (property) is primarily converging along Putnam Street, around the OU-1 Soil Remedy well DPE-9 and west of Putnam Street

around the OU-1 Soil Remedy wells VE-7D and VE-10D. The total average extraction rate associated with the November 5 and 7, 2019 water level data is 4.81 gpm, resulting in a similar capture zone to previous quarters.

Horizontal gradients within OU-1 are variable, at approximately 0.05 ft/ft from the property toward Putnam Street. The horizontal gradients between OW-3A and DPE-9 and between OW-9 and VE-10D (along and to the west of Putnam Street) were 0.05 ft/ft and 0.13 ft/ft, respectively on November 5 and 7, 2019, which are very similar to those recorded in 3Q2019.

Vertical gradients are examined at one well triplet and two well pairs: OW-1A/OW-12/OW-1B, OW-3A/OW-3B, and OW-8A/OW-8B, the locations of which are shown on Figure F-2. For each set of wells, the 'A' well is screened in the A-zone and the 'B' well is screened in the B-zone. OW-12 is also screened in the A-zone in-between OW-1A and OW-1B. The A-zone, essentially the water table aquifer, is currently being pumped by the GCR EWs and the OU-1 Soil Remedy DPE wells. The A-zone is the principal zone impacted by VOCs at the site.

The A and B-zones show minimal hydraulic connection as evidenced by the significant difference in head between them. The lithologic data demonstrate the presence of a 30-foot thick layer of clayey silt or silty clay that underlies the A-zone and acts as a confining unit between these zones, as shown on cross sections A-A' and B-B', further illustrating this hydraulic and physical vertical separation. The locations of both sections are shown in Figure F-3 and the cross sections themselves are shown in Figures F-4 (A-A') and A-5 (B-B'). In Figure F-4, the well screens of OW-3B and OW-8B are shown to be below the confining unit that underlies the A-zone. In Figure F-5, the lithology around OW-1A, OW-12, and OW-1B varies from what is observed at the other well pairs. In this instance, OW-1A is partially screened within a sand layer, but the area around the OW-12 and OW-1B well screens has been classified as clayey silt or silty clay. Since there are no lithological markers differentiating the two lower-screened wells (OW-12 and OW-1B), the groundwater elevations must be used to infer the degree of hydraulic connection/separation. Hydrographs of the water levels over time at these three wells are shown in Figure F-6. Although OW-1A has been dry for most of the OW-12 data collection period, vertical (downward) gradients can be seen between these two wells in the few instances where water was found at OW-1A since 2013. Vertical (downward) gradients between OW-12 and OW-1B are also present for all synoptic rounds of data except for August 2017, when groundwater elevations are approximately 117 feet MSL at both wells. Despite these similar elevations in August 2017 and again on February 2018, the units screened by these two wells are still considered to be hydraulically separated. This is similar to what has been observed at OW-3A/OW-3B (Figure F-7) and OW-8A/OW-8B (Figure F-8).

The area covered by the cone of depression in 4Q2019 is similar to what was observed and documented in 3Q2019 (CDM Smith, 2019) due to relatively consistent overall pumping. The combination of GCR extraction, OU-1 Soil Remedy extraction, and the regional drought conditions has essentially dewatered the A-Zone aquifer. As demonstrated on Figure F-1, containment of the OU-1 groundwater is attained.

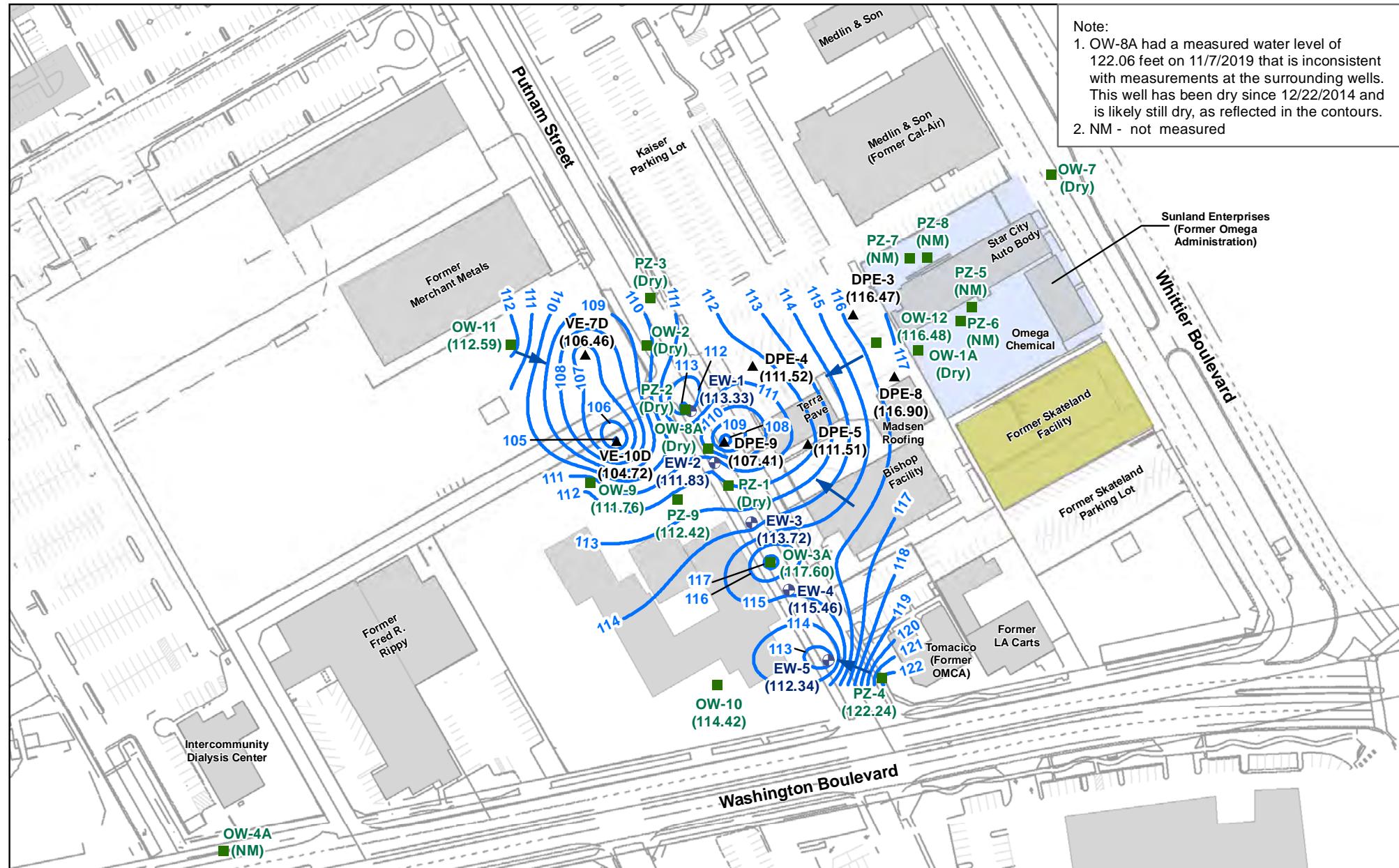
January 30, 2020

Page 3

***References***

CDM, 2007. *Performance Standards Verification Plan for Phase 1a Area Groundwater Treatment System.* April 19, 2007.

CDM Smith, 2019. *Omega Operable Unit 1 EE/CA Remedy Quarterly Groundwater Containment Review – August 15-16, 2019.* October 14, 2019.

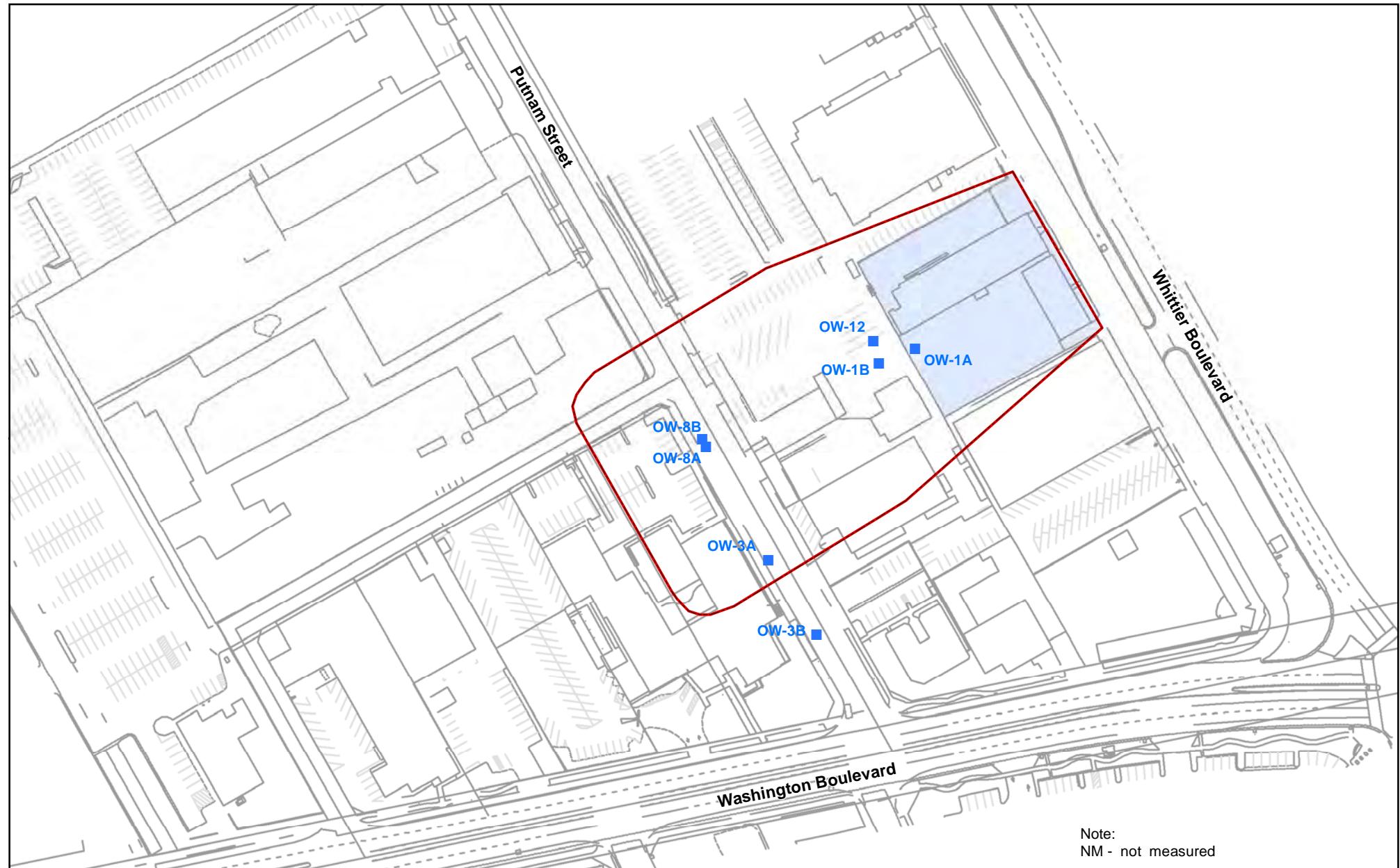


### Legend

- Phase Ia Area
- Former Omega Chemical Property
- Existing Building
- Former Building
- Groundwater Elevation Contour - Dashed where Inferred (Feet above mean sea level)
- Groundwater Flow Direction
- Extraction Well
- Shallow Observation Well / Piezometer
- ▲ Dual Phase Extraction Well Location

**Omega Chemical  
Shallow Zone  
Groundwater Contour Map  
November 5 and 7, 2019**

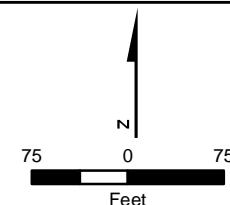
**Figure F-1**

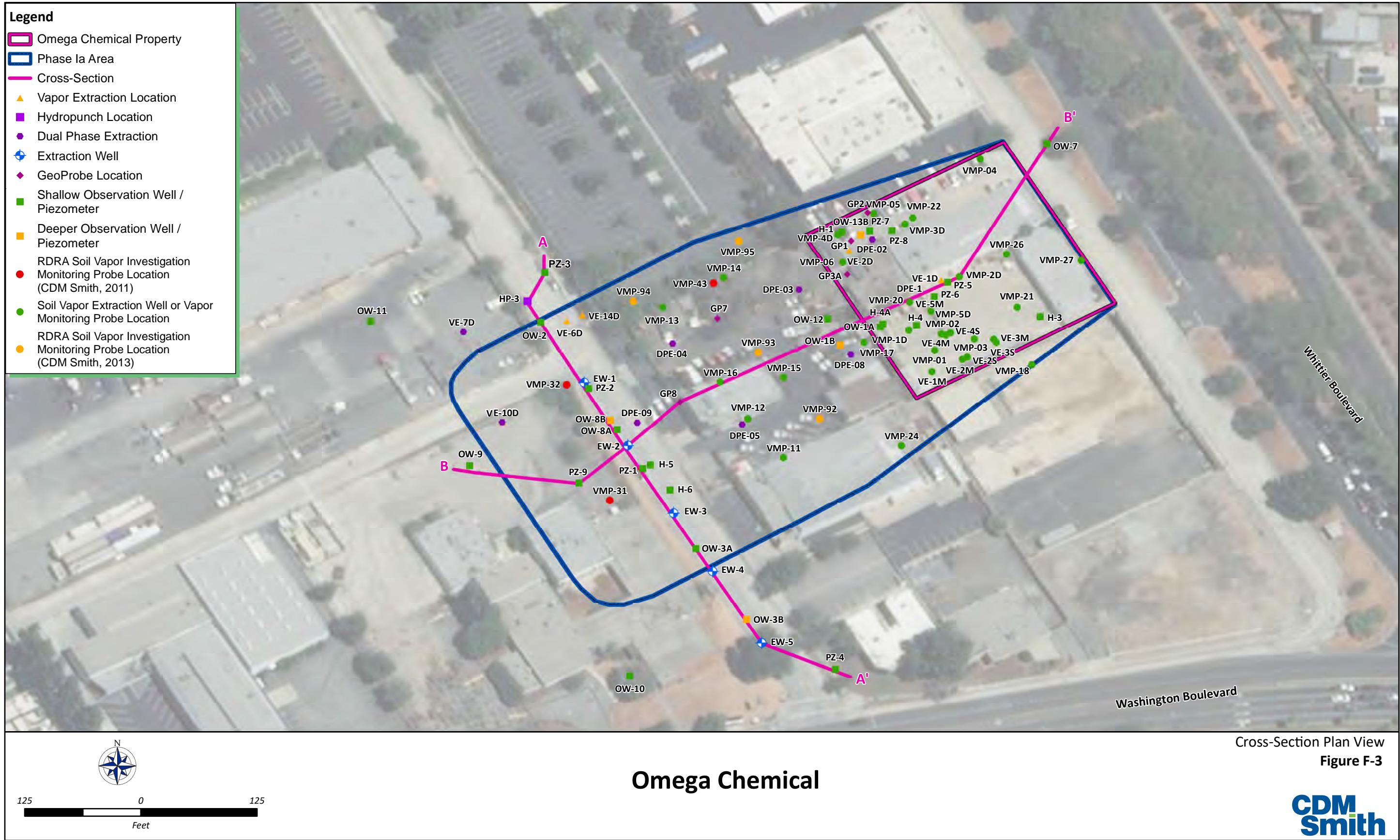


**Legend**

- Phase Ia Area
- Former Omega Chemical Property
- Observation Well Pair (A-zone/B-zone)

**Omega Chemical**  
A-zone/B-zone Well Pairs



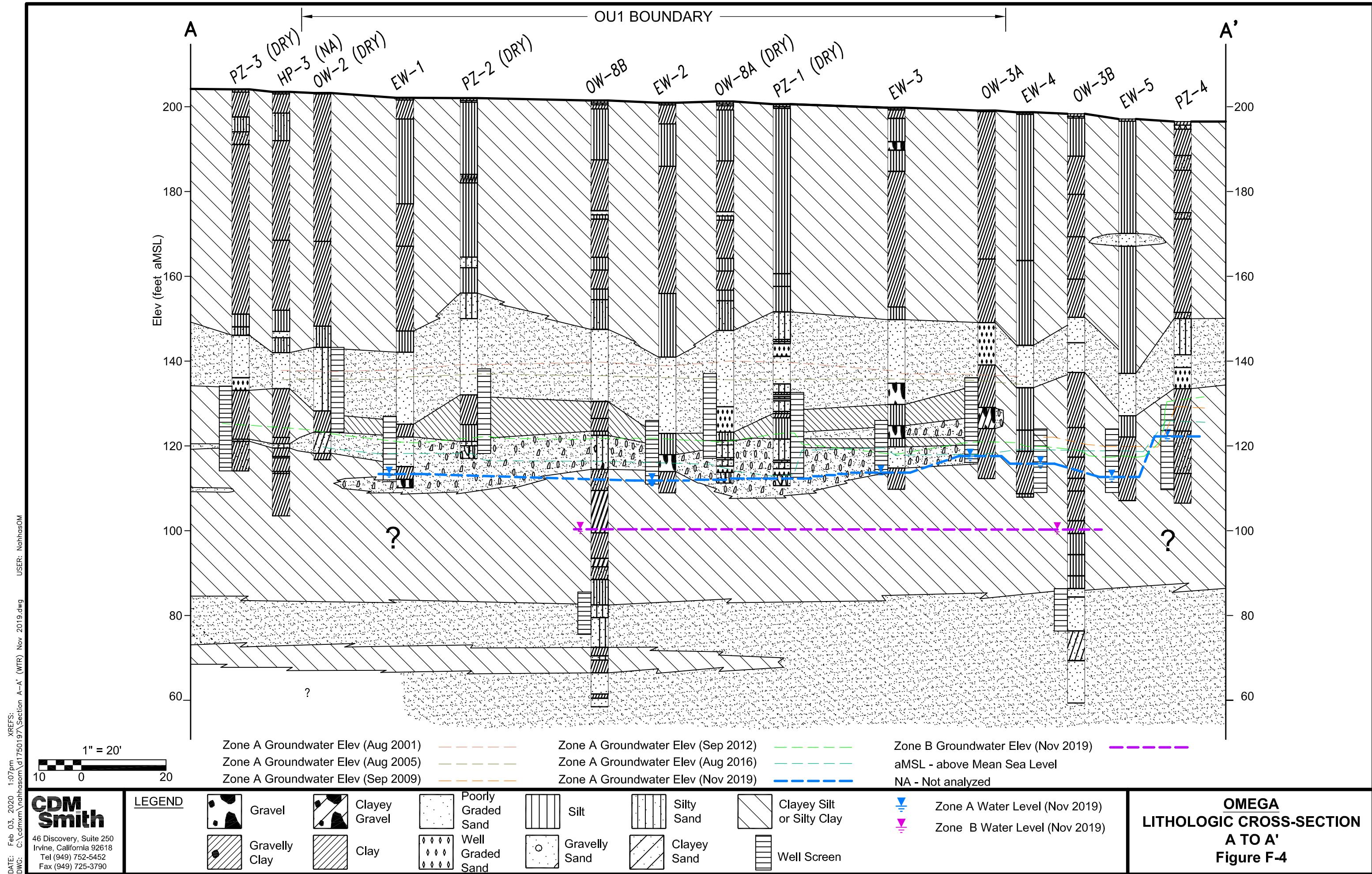


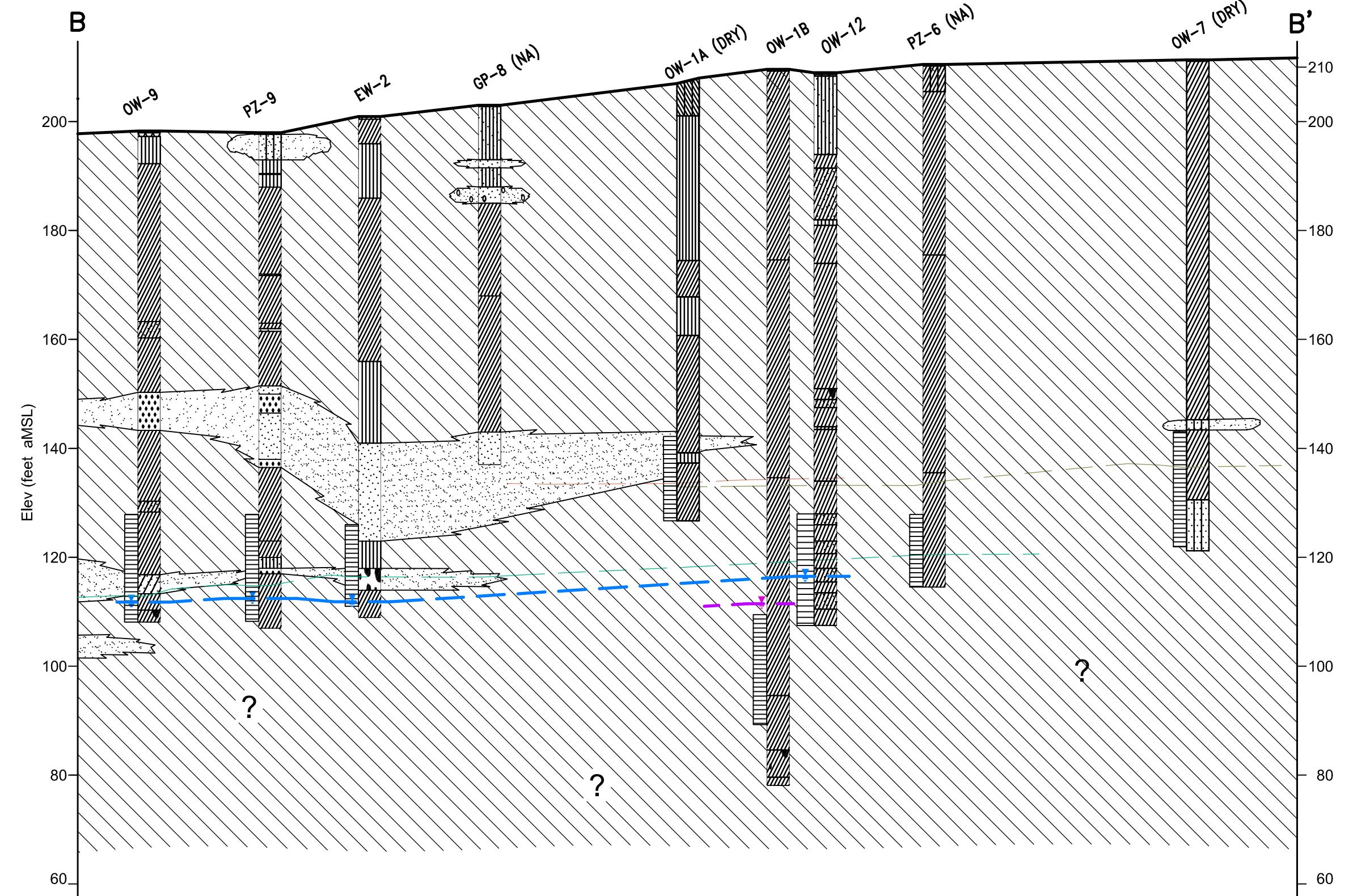
Omega Chemical

## Cross-Section Plan View

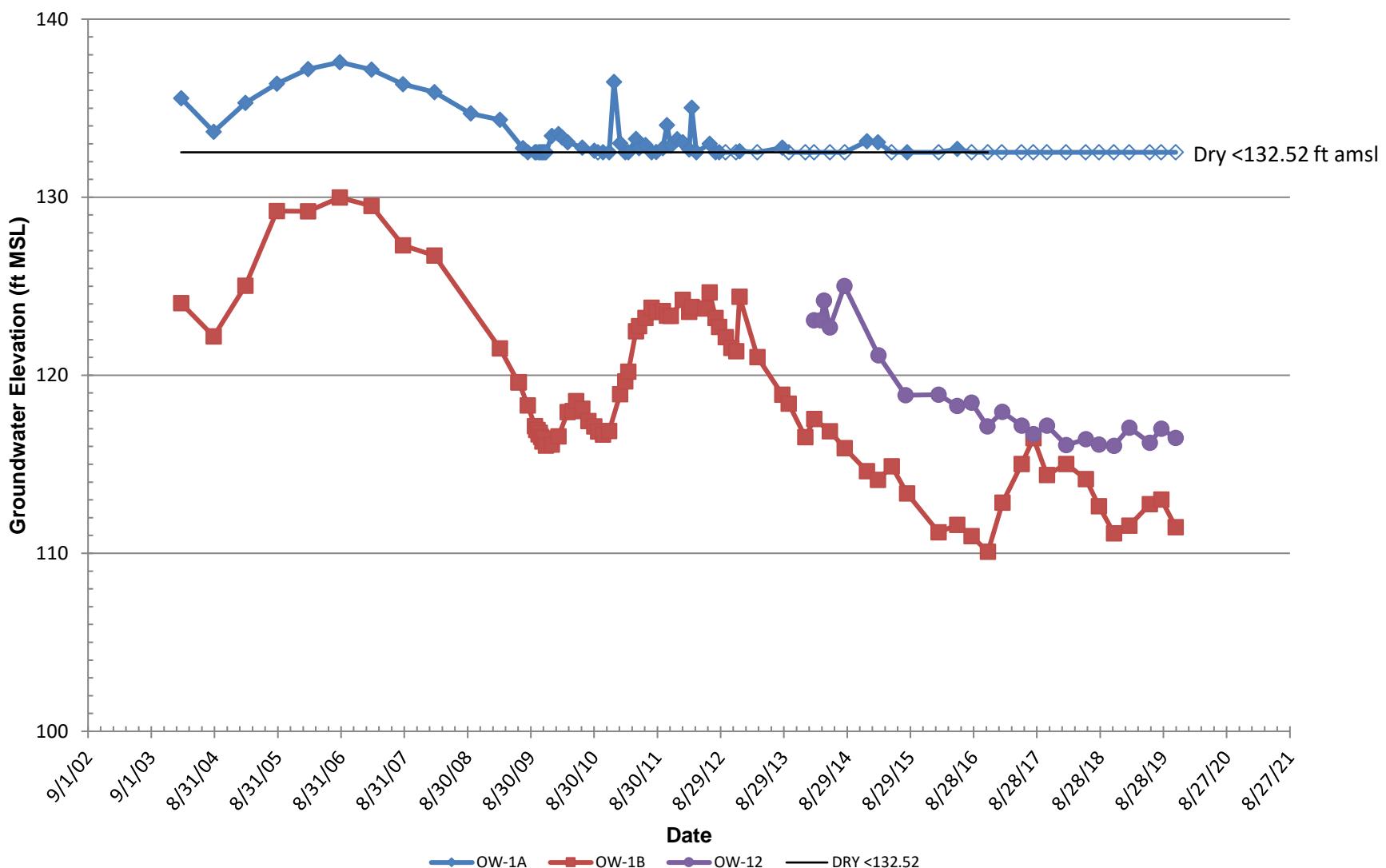
### Figure F-3

**CDM  
Smith**

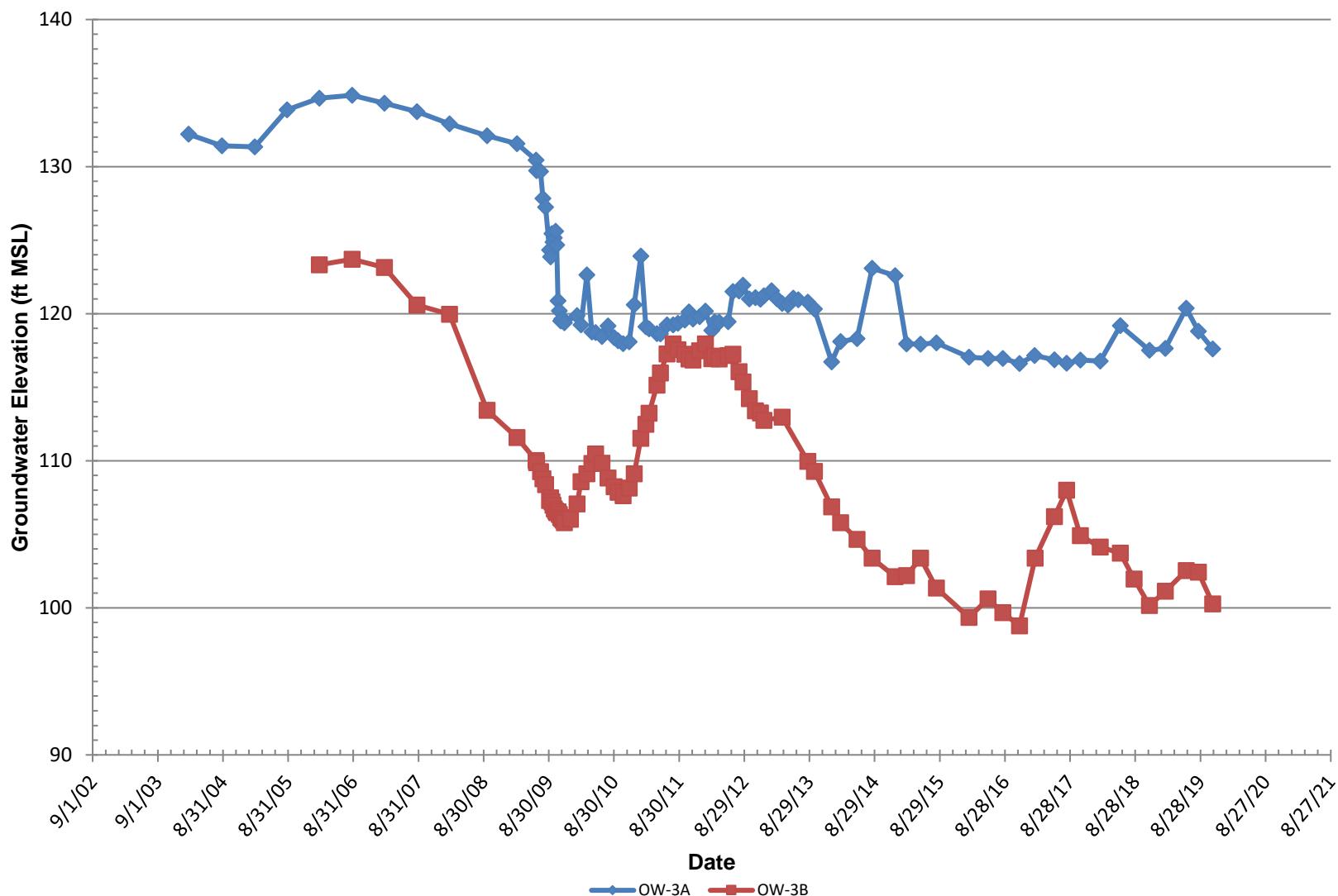




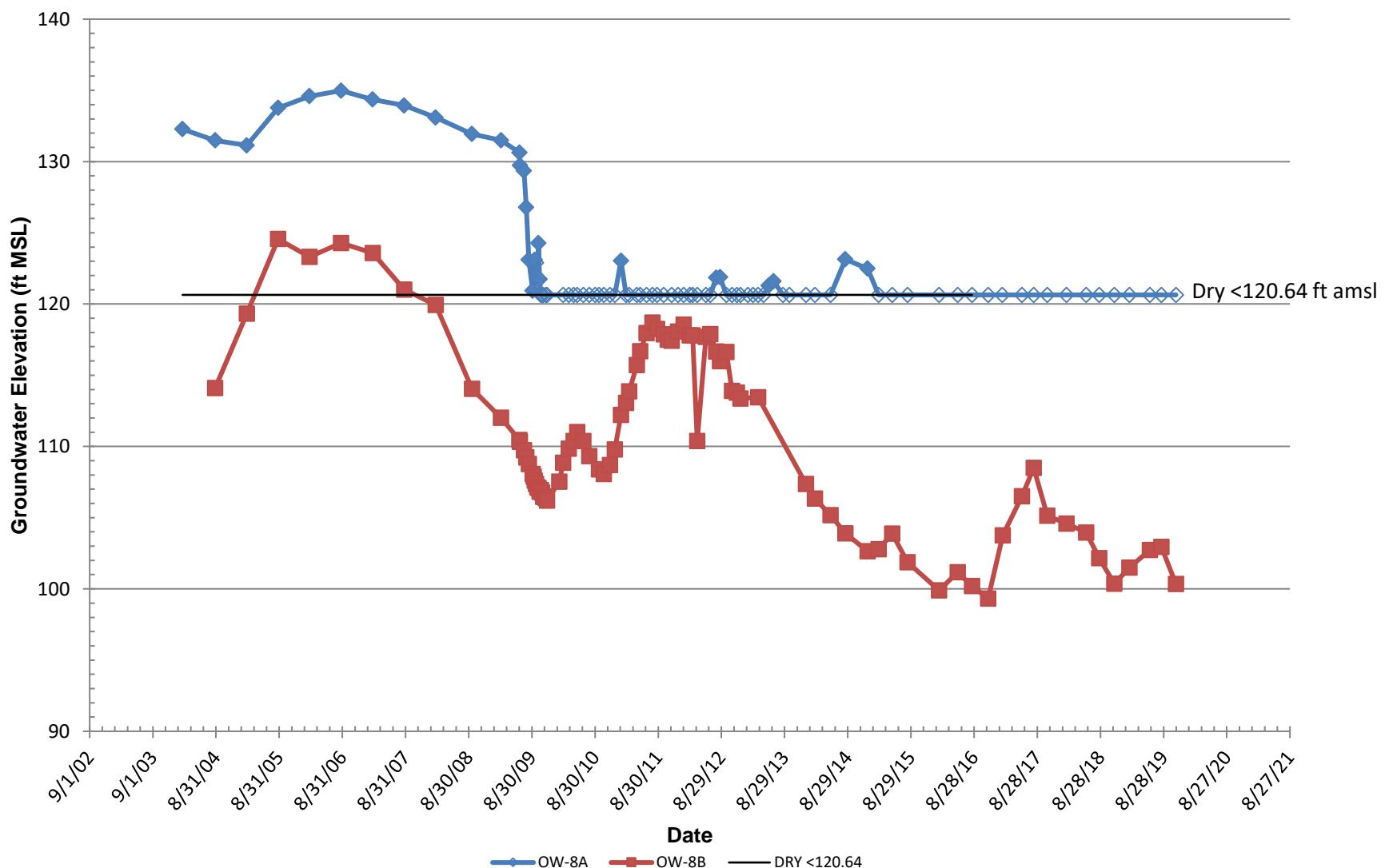
**Figure F-6**  
**Omega Chemical Superfund Site**  
**OW-1A, OW-1B, and OW-12 Well Hydrographs**  
**2004 to 2019**



**Figure F-7**  
**Omega Chemical Superfund Site**  
**OW-3A and OW-3B Well Hydrographs**  
**2004 to 2019**



**Figure F-8**  
**Omega Chemical Superfund Site**  
**OW-8A and OW-8B Well Hydrographs**  
**2004 to 2019**



## **ATTACHMENT G**

# **Annual Groundwater Model Update and Particle Tracking Figures**

**(Not Included this Quarter)**

## **ATTACHMENT H**

### **Field Forms**

**OMEGA**  
**DAILY FIELD REPORT**

Project Name: Omega Chemical		Project #: E742	Date: 11/5/19
Personnel: K. Azher	Sub Contractors: —		
Arrival Time: 0700	Departure Time: 1400	Hours on Site: 7.0	
Odometer (Start): —	Odometer (End): —	Total Miles: —	
Task Description: OU-1 SVE OMM <input type="checkbox"/> AOC SVE OMM <input type="checkbox"/> GWCS OMM <input checked="" type="checkbox"/> <i>+ Monthly GAC &amp; GW Sampling</i> <i>+ Quarterly GW Gauging</i>			

**Equipment List:**

<input type="checkbox"/> Vacuum Meter	Type: Extech Manometer	Serial #: 2147350
<input type="checkbox"/> Vacuum Meter	Type: Fluke 922 Low-Range	Serial #: 98040163
<input checked="" type="checkbox"/> PID/FID	Type: MiniRAE 3000 OPOG or rental?	Serial #: 594-907978
<input type="checkbox"/> Sample Pump	Type: Thomas Pump/Lung Box	Serial #: 061000166406/003689
<input checked="" type="checkbox"/> Flow Meter	Type: Velocicalc 9565	Serial #: 9565P1531034
<input checked="" type="checkbox"/> Water Level Meter	Type: Solinst 101	Serial #: 48231
<input type="checkbox"/> Water Quality Meter	Type: _____	Serial #: _____
<input type="checkbox"/> Generator/Battery	Type: _____	Serial #: _____
<input type="checkbox"/> Other(s): _____		

**Description of Work Performed:** (Summarize all field activities in a chronological sequence. Include tailgate health and safety meeting, personnel/visitors at site, calibration times and methods.)

0700 Arrive on site. H+S. Get paperwork ready. Mobilize equipment.

Calibrate PID (0-0.5 ppb): 0 ppb / 500.5 ppb Hexane.

0750 Start GWCS OMM. Collect GAC and GW samples.

0900 Finish OMM. Mobilize GW gauging equipment. Set up 3-bucket decan water. Calibrate PID for GW well casing. PID readings: 1001 ppm Ethylbenzene.

Client Signature (if applicable): \_\_\_\_\_ Date: \_\_\_\_\_

## DAILY FIELD REPORT

Project Name: Omega Chemical	Project #: E742	Date: 11/5/19
------------------------------	-----------------	---------------

0910 Start GW gauging.

1230 Finish gauging. Will return on 11/7 to collect LWD @ TP.

Demobilize equipment. Finish paperwork. Pack up summaries.

1400 off site. Going to FedEx to ship out samples.



## DAILY SAFETY MEETING

Project Name: Omega Chemical

Date: 11/5/19

Project Number: E742

Presented by: K. Arber

### Check the Topics/Information Reviewed:

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Safety is everyone's responsibility                   | <input checked="" type="checkbox"/> Smoking in designated areas                   | <input type="checkbox"/> ivy/oak/sumac/insects/animals  |
| <input type="checkbox"/> Accidents can be costly                               | <input type="checkbox"/> Parking and lay down area                                | <input type="checkbox"/> Upgrade to Level C at: PID ( <u>  </u> eV)<br>> <u>  </u> ppmv         |
| <input type="checkbox"/> No horseplay  | <input checked="" type="checkbox"/> Leather gloves for protection                 | <input type="checkbox"/> Work stoppage at: PID ( <u>  </u> eV)<br>> <u>  </u> ppmv, % LEL > 10% |
| <input type="checkbox"/> Site health and safety plan reviewed                  | <input checked="" type="checkbox"/> Vehicle backing up hazards                    | <input type="checkbox"/> All underground utilities cleared?                                     |
| <input type="checkbox"/> Review emergency protocol                             | <input checked="" type="checkbox"/> Sharp object, rebar, and scrap metal hazards  | <input checked="" type="checkbox"/> Flex-N-Stretch performed                                    |
| <input checked="" type="checkbox"/> Directions to hospital ( <u>p14</u> )      | <input checked="" type="checkbox"/> Effects of the night before?                  | <input checked="" type="checkbox"/> Anticipated visitors  |
| <input checked="" type="checkbox"/> Employee Right-To-Know/SDS location        | <input checked="" type="checkbox"/> Weather conditions (rain/snow)                | <input type="checkbox"/> Temporary Power Lines  |
| <input type="checkbox"/> First aid, safety, and PPE location                   | <input checked="" type="checkbox"/> Latex gloves inner/nitrile gloves outer       | <input type="checkbox"/> Overhead Utilities   |
| <input type="checkbox"/> Safety glasses, hard hat, safety boots                | <input checked="" type="checkbox"/> Vibration related injuries                    | <input type="checkbox"/> Excavations/Trenches (competent person)                                |
| <input type="checkbox"/> Fire extinguisher locations                           | <input checked="" type="checkbox"/> Open pits, excavations, and trenching hazards | <input type="checkbox"/> Heavy Equipment Operations   |
| <input type="checkbox"/> Daily work scope reviewed                             | <input checked="" type="checkbox"/> Noise hazards                                 | <input type="checkbox"/> Overloaded Equipment (tipping)   |
| <input checked="" type="checkbox"/> Strains and sprains                        | <input checked="" type="checkbox"/> Dust and vapor control                        | <input checked="" type="checkbox"/> Heavy Lifting   |
| <input checked="" type="checkbox"/> Slips, trips, and falls                    | <input type="checkbox"/> Excavation/trenching inspections/documentation           | <input checked="" type="checkbox"/> Traffic   |
| <input checked="" type="checkbox"/> Eye wash station locations                 | <input type="checkbox"/> Confined space entry – permit required                   | <input checked="" type="checkbox"/> Exclusion Zones   |
| <input checked="" type="checkbox"/> Electrical ground fault                    | <input type="checkbox"/> Confined space entry – non-permit required               | <input checked="" type="checkbox"/> Uneven Terrain  |
| <input checked="" type="checkbox"/> Vehicle safety and driving/road conditions | <input type="checkbox"/> Refueling procedures                                     | <input checked="" type="checkbox"/> Chemicals   |
| <input type="checkbox"/> Public safety and fences                              | <input type="checkbox"/> Full face respirators with proper cartridges             | <input checked="" type="checkbox"/> Flammability  |
| <input checked="" type="checkbox"/> Heat and cold stress                       | <input type="checkbox"/> Hot work permits   | <input checked="" type="checkbox"/> Wet Surfaces  |
| <input checked="" type="checkbox"/> Equipment and machinery familiarization    | <input type="checkbox"/> Flying debris hazards                                    | <input checked="" type="checkbox"/> Ladder Safety   |
| <input type="checkbox"/> Excavator swing and loading                           | <input type="checkbox"/> Overhead utility locations cleared.                      | <input checked="" type="checkbox"/> Pinch Points  |
| <input checked="" type="checkbox"/> Decontamination steps                      | <input type="checkbox"/> Poison   | <input type="checkbox"/> Unexploded Ordnance (UXO) Hazard                                       |
| <input type="checkbox"/> Portable tool safety and awareness                    |   | <input checked="" type="checkbox"/> Daily Vehicle Walkaround/Inspection                         |
| <input type="checkbox"/> Orderly site and housekeeping                         |   |   |

Other Discussion Items/Comments/Follow-up Actions: Stay Hydrated

JHA Site Health and Safety Officer (SHSO) of the day: Khalid Arber

NAME

SIGNATURE

COMPANY

Khalid Arber

Carr

JHA

### Instructions:

- Conduct a daily safety meeting prior to beginning each day's site activities
- • Complete form, obtain signatures, and file with the Daily Summary
- Follow-up on any noted items and document resolution of any action items.

**OMEGA**  
**DAILY FIELD REPORT**

Project Name: Omega Chemical		Project #: E742	Date: 11/7/19
Personnel: K.Dair, A.Yoo	Sub Contractors: -		
Arrival Time: 0600	Departure Time: 1400	Hours on Site: 8.0	
Odometer (Start): -	Odometer (End): -	Total Miles: -	
<b>Task Description:</b> OU-1 SVE OMM <input type="checkbox"/> AOC SVE OMM <input type="checkbox"/> GWCS OMM <input type="checkbox"/> <i>Continue Qtrfy GW gauging + Qtrfy VMP monitoring</i>			

**Equipment List:**

<input type="checkbox"/> Vacuum Meter	Type: Extech Manometer	Serial #: 2147350
<input checked="" type="checkbox"/> Vacuum Meter	Type: Fluke 922 Low-Range	Serial #: 98040163
<input type="checkbox"/> PID/FID	Type: MiniRAE 3000 OPOG or rental?	Serial #: 594-907978
<input type="checkbox"/> Sample Pump	Type: Thomas Pump/Lung Box	Serial #: 061000166406/003689
<input type="checkbox"/> Flow Meter	Type: Velocicalc 9565	Serial #: 9565P1531034
<input checked="" type="checkbox"/> Water Level Meter	Type: Solinst 101	Serial #: 48231
<input type="checkbox"/> Water Quality Meter	Type: _____	Serial #: _____
<input type="checkbox"/> Generator/Battery	Type: _____	Serial #: _____
<input type="checkbox"/> Other(s): _____		

**Description of Work Performed:** (Summarize all field activities in a chronological sequence. Include tailgate health and safety meeting, personnel/visitors at site, calibration times and methods.)

- 0600 Arrive on site H+S. Mobilize delineators. Go to OW-8A/8B to block off area.
- 0615 Get paperwork ready. Upload DFR
- 0635 Mobilize equipment. Calibrate PID (OPOG ppb): 0 ppb / 999 ppb Propane.
- 0650 start GW gauging and VMP monitoring @ TP.

Client Signature (if applicable): \_\_\_\_\_ Date: \_\_\_\_\_

## DAILY FIELD REPORT

Project Name: Omega Chemical	Project #: E742	Date: 11/7/19
------------------------------	-----------------	---------------

1030 Finish monitoring @ TP. Collected pics of secondary pipe penetrations through all DPE vault walls. All are cemented around piping and vault wall. Continue VMP monitoring.

1330 Finish monitoring. Demobilize equipment.

1400 off site.



## DAILY SAFETY MEETING

**Project Name:** Omega Chemical

Date: 11/7/13

**Project Number:** E742

**Presented by:** K. Azhar

**Check the Topics/Information Reviewed:**

- |  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> Safety is everyone's responsibility<br><input checked="" type="checkbox"/> Accidents can be costly<br><input checked="" type="checkbox"/> No horseplay<br><input checked="" type="checkbox"/> Site health and safety plan reviewed<br><input checked="" type="checkbox"/> Review emergency protocol<br><input checked="" type="checkbox"/> Directions to hospital (P14)<br><input checked="" type="checkbox"/> Employee Right-To-Know/SDS location<br><input checked="" type="checkbox"/> First aid, safety, and PPE location<br><input checked="" type="checkbox"/> Safety glasses, hard hat, safety boots<br><input checked="" type="checkbox"/> Fire extinguisher locations<br><input checked="" type="checkbox"/> Daily work scope reviewed<br><input checked="" type="checkbox"/> Strains and sprains<br><input checked="" type="checkbox"/> Slips, trips, and falls<br><input checked="" type="checkbox"/> Eye wash station locations<br><input checked="" type="checkbox"/> Electrical ground fault<br><input checked="" type="checkbox"/> Vehicle safety and driving/road conditions<br><input checked="" type="checkbox"/> Public safety and fences<br><input checked="" type="checkbox"/> Heat and cold stress<br><input checked="" type="checkbox"/> Equipment and machinery familiarization<br><input checked="" type="checkbox"/> Excavator swing and loading<br><input checked="" type="checkbox"/> Decontamination steps<br><input checked="" type="checkbox"/> Portable tool safety and awareness<br><input checked="" type="checkbox"/> Orderly site and housekeeping | <input checked="" type="checkbox"/> Smoking in designated areas<br><input checked="" type="checkbox"/> Parking and lay down area<br><input checked="" type="checkbox"/> Leather gloves for protection<br><input checked="" type="checkbox"/> Vehicle backing up hazards<br><input checked="" type="checkbox"/> Sharp object, rebar, and scrap metal hazards<br><input checked="" type="checkbox"/> Effects of the night before?<br><input checked="" type="checkbox"/> Weather conditions (rain/snow)<br><input checked="" type="checkbox"/> Latex gloves inner/nitrile gloves outer<br><input checked="" type="checkbox"/> Vibration related injuries<br><input checked="" type="checkbox"/> Open pits, excavations, and trenching hazards<br><input checked="" type="checkbox"/> Noise hazards<br><input checked="" type="checkbox"/> Dust and vapor control<br><input checked="" type="checkbox"/> Excavation/trenching inspections/documentation<br><input checked="" type="checkbox"/> Confined space entry – permit required<br><input checked="" type="checkbox"/> Confined space entry – non-permit required<br><input checked="" type="checkbox"/> Refueling procedures<br><input checked="" type="checkbox"/> Full face respirators with proper cartridges<br><input checked="" type="checkbox"/> Hot work permits<br><input checked="" type="checkbox"/> Flying debris hazards<br><input checked="" type="checkbox"/> Overhead utility locations cleared.<br><input checked="" type="checkbox"/> Poison | <input checked="" type="checkbox"/> ivy/oak/sumac/insects/animals<br><input checked="" type="checkbox"/> Upgrade to Level C at: PID (eV) > ppmv<br><input checked="" type="checkbox"/> Work stoppage at: PID (eV) > ppmv, % LEL > 10%<br><input checked="" type="checkbox"/> All underground utilities cleared?<br><input checked="" type="checkbox"/> Flex-N-Stretch performed<br><input checked="" type="checkbox"/> Anticipated visitors<br><input checked="" type="checkbox"/> Temporary Power Lines<br><input checked="" type="checkbox"/> Overhead Utilities<br><input checked="" type="checkbox"/> Excavations/Trenches (competent person)<br><input checked="" type="checkbox"/> Heavy Equipment Operations<br><input checked="" type="checkbox"/> Overloaded Equipment (tipping)<br><input checked="" type="checkbox"/> Heavy Lifting<br><input checked="" type="checkbox"/> Traffic<br><input checked="" type="checkbox"/> Exclusion Zones<br><input checked="" type="checkbox"/> Uneven Terrain<br><input checked="" type="checkbox"/> Chemicals<br><input checked="" type="checkbox"/> Flammability<br><input checked="" type="checkbox"/> Wet Surfaces<br><input checked="" type="checkbox"/> Ladder Safety<br><input checked="" type="checkbox"/> Pinch Points<br><input checked="" type="checkbox"/> Unexploded Ordnance (UXO) Hazard<br><input checked="" type="checkbox"/> Daily Vehicle Walkaround/Inspection |
|--|--|---|

Other Discussion Items/Comments/Follow-up Actions: Stay hydrated

**JHA Site Health and Safety Officer (SHSO) of the day:** Khalid Ahsan

**NAME**

## SIGNATURE

## **COMPANY**

Annakel You

John  
Curd

AHA

**Instructions:**

- Conduct a daily safety meeting prior to beginning each day's site activities
  - Complete form, obtain signatures, and file with the Daily Summary
  - Follow-up on any noted items and document resolution of any action items.

**GROUNDWATER GAUGING FORM**  
**OMEGA CHEMICAL GROUNDWATER TREATMENT SYSTEM**  
 WHITTIER, CA

DATE:

11/5/19, 11/7/19

TECHNICIAN(S): K. Azhar

Well ID	Well Diameter	Time (hh:mm)	PID (ppm)	Depth to Water (ft btoc)	Previous Depth to Water (ft btoc)	Total Depth (ft btoc)	Previous Total Depth (ft btoc)	Screen Interval (ft btoc)	HMI
EW-1	6	11/5 0940	0.236	85.63	85.3	-	NM	72-87	85.60
EW-2	6	11/5 0950	0.129	86.04	84	-	NM	72-87	84.14
EW-3	6	11/5 1000	0.202	83.06	82.51	-	NM	70-85	82.57
EW-4	6	11/5 1021	0.120	84.33	81.95	-	NM	71-86	79.97
EW-5	6	11/5 1020	0.495	81.85	81.6	-	NM	70-85	81.51
PZ-1	2	0955	0.141	DRY	86.29	87.25	87.27	68-88	
PZ-2	2	0932	0.124	DRY	84.05	84.41	84.45	64-84	
PZ-3	2	0925	0.399	DRY	DRY	89.01	88.99	69.8-89.8	
PZ-4	2	0920	1.057	74.02	70.43	89.00	89	70-90	
PZ-9	2	1102	0.266	86.55	84.41	90.00	90.02	70-90	
OW-1a	4	1206	0.206	DRY	DRY	82.58	82.55	62.5-77.5	
OW-1b	4	11/7 1015	1.474	95.75	94.2	118.15	118.15	110-120	
OW-2	4	11/5 0929	0.150	DRY	DRY	79.49	79.55	60-80	
OW-3a	4	1005	0.064	80.98	79.77	81.82	81.84	63-83	
OW-3b	4	1015	1.578	97.11	94.95	122.00	122	112-122	
OW-7	4	11/5 0850	0.236	DRY	DRY	89.10	89.12	70.9-90.9	
OW-8a	4	11/7 0705	0.073	78.60	75.66	79.04	79.1	60.4-80	
OW-8b	4	11/7 0710	0.060	100.49	98.3	126.00	126	116-126	
OW-9	4	11/5 1057	0.172	86.31	85.85	89.75	89.8	70-90	
OW-10	4	11/5 1055	1.579	81.12	77.12	89.02	89	69.5-89.5	
OW-11	4	11/5 1042	0.309	87.47	87.11	98.71	98.8	80-100	
OW-12	4	11/7 1010	1.621	91.94	91.42	100	100	80-100	
DPE-3	4	11/7 1000	NM	90.29	91.97	-	NM	40-100	92.12
DPE-4	4	11/7 0950	NM	91.45	91.87	-	NM	40-100	92.18
DPE-5	4	11/7 1019	NM	90.26	92.02	-	NM	40-100	92.14
DPE-8	4	11/7 1004	NM	87.97	90.84	-	NM	40-100	90.83
DPE-9	4	11/7 0723	NM	91.45	92.3	-	NM	40-100	91.96
DPE-7D	4	11/5 1046	0.005	93.65	90.52	-	NM	40-100	93.02
DPE-10D	4	11/5 1107	1.363	94.54	92.77	-	NM	40-100	94.08
OW-13B	4	11/5 1156	143.0	99.45	98.22	140.09	140	40-140	

## **ATTACHMENT I**

**Annual Mann-Kendall Analysis**  
(Not Included this Quarter)